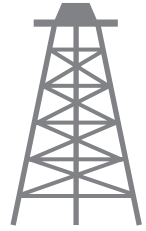




# Pacific Petroleum Geology



NEWSLETTER

Pacific Section • American Association of Petroleum Geologists

January and February 2025

## **Changes to the Pacific Section AAPG Constitution and By-laws Upcoming re-vote on the proposed changes (Page 7)**



**Plus: Interview With a Pacific Section AAPG Geologist: Daniel Schwartz  
The Steven Sand, Part II  
And more**





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**Cover Photograph:** A photo of the eastern Sierra Nevada in Winter? NO. The photo is by Daniel Schwartz of Torres del Paine spires and horns (Miocene granitic and mafic laccolith) from the bank of the Lago Pehoe in southern Chile. Learn more of Dan's adventures in this month's edition of Interview with a Geologist on Page 19.

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Submit an Article to the  
 Pacific Petroleum Newsletter!

- CONTACT THE EDITOR at editor@PSAAPG.org
- Images (graphics, photos, and scans) must be at least 300 dpi resolution. Text should be at least 600 dpi.
- Scanned photos, illustrations (line art) or logos should preferably be submitted as a .tif, .gif, or .bmp; .jpeg

## Newsletter Advertisements

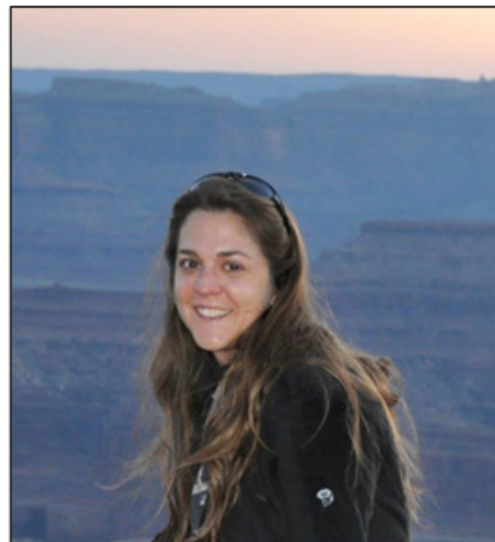
**The Pacific Petroleum Geology Newsletter has new lower rates and new advertising avenues. See Page 18 for more information.**

President's Letter  
Amy Spaziani

January/February 2025

Greetings Pacific Section Members and Happy New Year!

Even though we have moved into a new year, we are still celebrating the 100-year anniversary of the Pacific Section! I am very proud of our members and affiliated societies for continuing to celebrate this momentous event! As a reminder, it was early in 1925 that the Pacific Section, then the Pacific Society of Petroleum Geologists, was formally adopted as a section of AAPG.



There are several events coming up with the affiliated societies in honor of the 100-year anniversary and I hope that you can take advantage of one or all(!) of these events. The Alaska Geological Society will be holding their annual technology conference in honor of the 100-year anniversary. The conference will take place in spring, with more details being announced in March. The Northern California Geological Society is hosting special guest speakers this spring. Their talks are usually posted to their youtube channel also, so everyone has an opportunity to participate in some form. The San Joaquin Geological Society is also planning an event in the spring. More details to come, so please check the Pacific Section emails over the next several weeks!

**Data Preservation:** As mentioned in a previous letter, California is in a critical state with data storage. There simply is not enough physical space to store the well files, paper logs, core, maps, seismic profiles, among other data that is being left behind or that Pacific Section has accumulated. Thousands of feet of core have been rescued from being disposed of and are currently being housed at Best Core, while volunteers review and catalog the data. This is a temporary solution as funding needs to be secured for permanent storage. The core is valuable data for anyone working on subsurface projects, including carbon sequestration, orphaned wells and abandonment procedures, gas storage, and even geohazards. In addition to reviewing core data, Pacific Section volunteers, mainly Treasurer-elect and Membership Chair, Simmie Chehal, and Past President and Publications Chair, Kristy Whitaker, cataloged and consolidated the Pacific Section storage units and successfully condensed the units down to one. The storage units house paper publications, and volunteers (mainly Simmie) are working on digitizing these publications.

**AAPG Collaboration:** AAPG held the first Sections Leadership meeting in January, and it was great to meet all the new presidents of the other sections. The discussion around the

challenges and successes of our respective sections was very informative. Like the PSAAPG, many sections are still struggling with engagement and membership. However, many found local meetings with an emphasis on local subsurface challenges and ideas were well supported. There are some exciting events that the sections either just held, such as Southwest's continuing education course, or are upcoming, such as GeoGulf in Nacadoches, TX. We also discussed Image '24 and its relevance to the greater AAPG community outside of Houston and the Gulf Coast. Not exactly surprising, given attendance at the event, but many stated it's not as relevant as it should be. We are still discussing the possibility of a series a webinars that could be hosted by the sections on topics relevant to each section.

**Budget and Funding:** Over the last year and a half, PSAAPG has implemented CD ladders to earn interest in the absence of major conventions and member and company donations that helped support scholarships. Through the work of our treasurer and treasurer-elect, Lisa Alpert and Simmie Chehal, and the PSAAPG Foundation Treasurer and Past PSAAPG president, Becca Schempp, we have earned enough seed money for the previously mentioned AAPG scholarship in Bob Lindblom's name, and to ensure the continuation of PSAAPG scholarship donations to the affiliated societies for this year and future years.

**Website:** The Pacific Section webmasters, Mike Clark and Kenton Crabtree, have been working on some changes for the PSAAPG website. The most exciting change in my opinion is the addition of an events calendar to the page. This will be a section which will house all affiliated society, Pacific Section, and relevant AAPG events in one place. No more searching through emails! We hope to roll this out sometime in spring.

**Constitution and By Laws:** In the following pages of this newsletter, changes to the Pacific Section AAPG Constitution and By Laws have been proposed. These changes were originally printed in the September/October 2023 newsletter for review by the membership. Please review the proposed changes and please participate in the membership vote to accept or reject these changes. An email will be sent later this week with instructions for submitting your vote. This is a redo of the vote that was attempted last year. Some of the wording in the vote last year was incorrect, and the vote was subsequently nullified.

**Newsletter:** This year we have taken a hard look at our newsletter content and advertisement. We have added a few new columns to the newsletter and hope to incorporate more from around the Pacific Section in the next several issues. We have also revamped our advertising policy and rates. Due to the length of this newsletter, we are not running company advertisements in the January/February edition. Please see the flyer in this newsletter for the new advertising terms, but the goal is to be more accessible to our members and the companies they run, or the field trips or courses they teach.



**Membership:** This year, 69 memberships will be expiring. An email from the PSAAPG gmail account is sent when a membership is about to expire, but sometimes these emails go to spam or “other” folders and sometimes the email is blocked by company filters. Please look for the emails or check your membership status on the PSAAPG website. If you have not been receiving emails, particularly at a work email, please contact Simmie Chehal at PSAAPG@gmail.com to change your primary email address.

**Executive Committee:** It is once again time to think about a new executive committee. If you are interested in getting involved in the geoscience community, I urge you to consider running for a position. Positions available include President-elect, Treasurer-elect, Secretary, and Editor in Chief. If you would like to know more about any of these positions, please reach out to myself or any Pacific Section officer. This is a wonderful opportunity for networking and visibility and provides the opportunity to shape our geoscience organization. In addition, we need to hold an election for a representative to the Advisory Council of AAPG. This is an important role that represents the section at the national level in awards and honors. I have appointed Becca Schempp as the representative for this year, however, we must have at least two interested candidates to run for the position and to represent us through 2027. With changes looming at the national level, it is of utmost importance that we officially fill this position. If you are interested or would like to know more, please reach out to me or any Pacific Section officer.

There are a few additional events in the Pacific Section community coming up as well. First there is the Pacific Section of SEPM field trip, led by past PSAAPG president, Rick Behl. The field trip will take place March 7-9. There is the Orphan and Idle Wells California Conference, hosted by Energy Conference Network in Bakersfield March 25 – 26. In April, CSU Bakersfield and the California Energy Research Center (CERC) will host their annual Carbon Management and Energy Innovation Symposium in person and online. Please see the save the date in this newsletter for more information.

As always please do not hesitate to reach out. Ideas, comments, suggestions, volunteers, and questions are always welcome!

Best,

Amy Spaziani

### Proposed Changes to the Pacific Section AAPG Constitution and By-laws Pacific Section AAPG Executive Committee

The Pacific Section Executive Committee is currently dealing with a serious problem: the inability to reach a quorum for our meetings. Decisions are not being made or are significantly delayed due to not having enough voting members at meetings. Part of the problem is that one office, the Vice-President, is not filled. Another problem is two of our affiliated societies are no longer active (Sacramento Petroleum Association and Northwest Energy Association). Voting members of the executive committee include the Past President, President, President-Elect, Treasurer, Treasurer-Elect, Secretary, and Editor-in-Chief. Presidents of affiliated societies or their delegate, are also voting members. Committee chairs are not voting members unless they also hold an office, or they are a delegate from an affiliated society.

Three modifications to the Constitution and By-laws (C&B) are proposed by the Executive Committee that will address how the quorum is redefined, and, if approved by the PSAAPG membership, will help the Executive Committee make more timely decisions. In the following pages, we are publishing the entire C&B which includes the proposed changes, and we are asking for your feedback. All three modifications have been approved by the Executive Committee.

#### **Modification 1: Elimination of the office of Vice-President**

Edits to the C&B include removal of all references to the Vice-President, including transferring duties to the President-Elect. There are two reasons to eliminate the office of Vice-President: (1) with the recent addition of the President-Elect, the Vice President has few tasks, and (2) even before the Pandemic, finding officer candidates was very difficult. Eliminating the office will help the Executive Committee in their decision making by helping to reduce the number of members necessary to reach a quorum.

#### **Modification 2: Redefinition of affiliated geologic societies as active affiliated geologic societies**

Edits modify Section 2 of Article IV to define the Executive Committee as consisting of elected officers and representatives of active affiliated societies, and adds a definition of active affiliated societies as having their own executive committee and being involved with the Pacific Section Executive Committee within the last two years. Recently, two of the seven affiliated geological societies in the Pacific Section became inactive. Removing inactive affiliated societies will have a positive effect on the Pacific Section Executive Committee meeting by permitting a lower quorum requirement for decision making. Inactive affiliated societies may rejoin the Pacific Section if they reestablish their executive committees.

#### **Modification 3: Redefinition of a quorum for conducting business for the Pacific Section Executive Committee**

The edits to Section 2 of Article VII remove the current quorum of 8 members of the Executive Committee and redefines a quorum as more than 50 percent of the total Executive Committee members. Currently the number of members required to reach a quorum for meetings is 8, but with two inactive affiliated societies and a vacant Vice-President office, reaching a quorum in meetings is rare. This slows decision making, and approval of motions may stretch out over months. The new definition of a quorum is a floating number, and the quorum may change as affiliated societies become inactive or reactivated.

**The entire C&B is presented beginning on the following pages. Recommended edits are highlighted in red, showing deleted text as strikeouts, and new text. Please review the recommended changes. Within the next month, PS AAPG members will be contacted by email and asked in a single vote to approve or not approve all the proposed changes. As you vote, please refer to this newsletter, posted on the PS AAPG web site, as your reference for reviewing the changes.**

**CONSTITUTION AND BYLAWS  
PACIFIC SECTION OF THE  
AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS  
Adopted September, 1924  
Amended July 2011**

**Proposed Updates with ~~strike-outs~~ and new text, February 2025**

**CONSTITUTION**

**ARTICLE I. NAME**

This organization, whose area of interest comprises the Pacific Coastal Region, shall be known as “Pacific Section of the American Association of Petroleum Geologists” and is hereinafter referred to as “PSAAPG.”

**ARTICLE II. PURPOSE**

**SECTION 1.**

The purpose of PSAAPG shall be to provide for discussion of subjects and problems coming within the scope of the profession and to advance the science of geology and the professional well-being of our members. PSAAPG, by such intercourse, will promote the advancement and aims of the American Association of Petroleum Geologists (hereafter referred to as “AAPG”) as set forth in its Constitution, By-laws and Code of Ethics.

**SECTION 2.**

PSAAPG is a non-profit [501(c)(6)] corporation, and no portion of the financial assets inures to the benefit of any private individual or member.

**SECTION 3.**

PSAAPG may affiliate with any other geological organization in order to further its purposes and to cooperate in activities including but not limited to the annual convention, newsletter, directory, and publication sales.

**ARTICLE III. MEMBERSHIP**

**SECTION 1.**

The members of PSAAPG shall consist of persons concerned with or furthering the professional applications of the geological sciences.

**SECTION 2.**

Various classifications of memberships and the qualifications thereof shall be established by the By-laws of PSAAPG.



## ARTICLE IV. OFFICERS

### SECTION 1.

The elected officers of PSAAPG shall be a President, ~~a Vice-President,~~ a President-Elect, the immediate Past-President, a Secretary, a Treasurer, a Treasurer-Elect, and an Editor-in-Chief. The officers shall assume their duties at the beginning of the membership year next following their election as hereinafter provided. The duties of the officers are defined in the By-laws. During the absence of the President, the President-Elect shall assume the duties. In the event of the death or resignation of the President, the President-Elect shall succeed to the office and title of President. Should the President-Elect be unable to serve in this capacity, the duties and title of President shall be assumed by ~~(first) the Vice-President, or (second) the~~ Secretary. In the event of a vacancy of any office, other than the President and immediate Past-President, the Executive Committee shall appoint an active member to fill the vacancy. In making such an appointment, the Executive Committee shall give due consideration to appointing a member from the nominees at the last previous election.

**Please see  
Modification 1  
for discussion  
of the  
elimination of  
the office of  
Vice- President**

### SECTION 2.

There shall be an Executive Committee consisting of the President, President-Elect, Past President, ~~Vice-President,~~ Secretary, Treasurer, Treasurer-Elect, Editor-in-Chief, and one representative selected from each **active** affiliated geological society approved by their existing Executive Committee. **An active affiliated geological society is defined as an affiliated society of AAPG that has an Executive Committee and has participated in at least one of the Pacific Section's Executive Committee meetings within the last two years.**

**Please see  
Modification 2  
for discussion  
defining  
affiliated  
societies as  
active**

### SECTION 3.

The President, ~~Vice-President,~~ Secretary, Treasurer, and Editor-in-Chief of PSAAPG can not hold elected office concurrently in AAPG or affiliated societies of AAPG, with the exception of the AAPG House of Delegates. If the President, ~~Vice-President,~~ Secretary, Treasurer, or Editor-in-Chief chooses to serve as an officer in AAPG or an affiliated society, then the Executive Committee will appoint a replacement.

## ARTICLE V. PROPERTY

### SECTION 1.

Property of PSAAPG includes logo, letterhead, newsletter, website, publications (copyright and inventory), contracts, funds held in banks and any other asset of PSAAPG.

## **SECTION 2.**

The Executive Committee of PSAAPG is responsible for the management of PSAAPG's property.

## **SECTION 3.**

In the event of the dissolution of PSAAPG, PSAAPG shall distribute any assets remaining after the discharge of all liabilities, for charitable, scientific, or educational purposes. Under these circumstances, no member of PSAAPG shall have any right to or interest in the property or assets of PSAAPG.

## **ARTICLE VI. FUNDS**

### **SECTION 1.**

The Executive Committee shall establish the fiscal year, review the financial position of PSAAPG, and have a current financial statement available at each annual business meeting. Annual dues of PSAAPG shall be payable in advance in an amount established by the membership at the annual business meeting. The Executive Committee shall not have authority to levy assessments against the membership and shall not have the authority to increase annual dues.

### **SECTION 2.**

The funds of PSAAPG shall be deposited to the credit of Pacific Section of the American Association of Petroleum Geologists in any federally insured depository selected by the Treasurer or Treasurer-Elect but not to exceed the limit insured by the Federal Deposit Insurance Corporation. Whenever necessary, the President shall certify to the authority of the Treasurer and Treasurer-Elect in administering PSAAPG's accounts by providing the depository bank with a notice of the Treasurer's and Treasurer-Elect's selection and with a true copy of this Constitution. The Treasurer and Treasurer-Elect shall have authority to issue checks against the bank account so established, on the Treasurer's or Treasurer-Elect's sole signature, but in the event of the Treasurer's or Treasurer-Elect's absence, withdrawals or payments by check may be made on the signature of the President. The identity and authority of the President and the circumstances relating to the absence of the Treasurer and Treasurer-Elect shall be certified to by the Executive Committee if so required by the depository bank.

## **ARTICLE VII. MEETINGS**

### **SECTION 1.**

The Pacific Section shall hold an annual convention meeting at a location approved by the Executive Committee. If the annual meeting of AAPG is held in the regional area of PSAAPG, the Pacific Section will not hold their annual convention meeting that year.

**SECTION 2.**

The Executive Committee shall conduct business meetings at the annual meeting and at such other times during the year and at such places as designated by the President or a majority of the Executive Committee. Robert's Rules of Order shall apply at all meetings. A quorum shall consist of ~~eight (8)~~ **more than 50 percent of the total number of** members of the Executive Committee.

**Please see  
Modification 3  
for discussion of  
changing how a  
quorum is  
determined**

**SECTION 3.**

At the annual convention meeting, the Executive Committee will hold a public meeting for the Pacific Section membership. The purpose of the meeting is to inform members of the activities of the Executive Committee and its committees, to encourage input from the membership, and to vote on adjustments to annual dues.

**ARTICLE VIII. ELECTIONS****SECTION 1.**

The Past-President of the Pacific Section of the American Association of Petroleum Geologists, with the approval of the Executive Committee, shall appoint a nominating committee at least three (3) months prior to the beginning of the next membership year of the Pacific Section, consisting of four (4) members, two (2) of whom shall be Past-Presidents of the Pacific Section. The nominating committee shall, each year, select two (2) candidates for each of the following offices: President-Elect, ~~Vice-President,~~ Treasurer-Elect, and Secretary, and every other year shall select two (2) candidates for the office of Editor-in-Chief. All candidates for positions as officers of PSAAPG shall be current members in good standing of the Pacific Section. The final slate of candidates shall be approved by the Executive Committee. The slate of the candidates shall be announced in the "Pacific Petroleum Geologist Newsletter" at least six (6) weeks prior to the election. Additional nominations may be made by written petition of twenty-five (25) or more members of the Pacific Section in good standing, received by the Secretary within two (2) weeks following the publication of the nominating committee slate of candidates. The Executive Committee shall have the authority to name an additional nominee in case of necessity, to assure two candidates for each office. Voting shall be by mailed ballot. The Secretary shall set a date for counting ballots and shall mail ballots to all members not less than six (6) weeks prior to this date. A candidate receiving a plurality of votes is the winner of the election. In the case of 3 or more candidates, elections will be held using procedures outlined in the AAPG Constitution and By-laws.

**SECTION 2.**

In matters pertaining solely to the business of PSAAPG, all Active and Honorary Members of PSAAPG may vote. In matters pertaining to the Advisory Council and other official business of The American Association of Petroleum Geologists, only Active and



Honorary Members of that Association as assigned to PSAAPG shall be qualified to vote.

### **SECTION 3.**

This Constitution and By-Laws may be amended by a mail ballot. Ballots concerning such amendments shall be mailed upon the authority of the Executive Committee or upon receipt by the Secretary of a Petition for Amendment signed by fifty (50) or more members in good standing. A two thirds majority of the ballots returned and received by PSAAPG by the closing date noted on the ballot shall be required to pass any amendment.

## **BY-LAWS**

### **ARTICLE I. TERMS FOR OFFICERS**

#### **SECTION 1. PRESIDENT-ELECT**

The President-Elect is elected annually and the term of office shall be for three (3) years. The President-Elect's term is served in three parts: during the first year as President-Elect, during the second year as President, and during the third year as Past-President. Presidential terms will overlap and are intended to help provide continuity as new officers are elected.

#### ~~**SECTION 2. VICE-PRESIDENT**~~

~~The Vice-President is elected annually and the term of office shall be for one (1) year.~~

#### **SECTION 32. TREASURER-ELECT**

The Treasurer-Elect is elected annually and the term of office shall be for two (2) years. The Treasurer-Elect's term is served in two parts: during the first year as Treasurer-Elect, and during the second year as Treasurer. The Treasurer's terms are overlapping and are intended to help provide continuity as new officers are elected.

#### **SECTION 43. SECRETARY**

The Secretary is elected annually and the term of office shall be for one (1) year.

#### **SECTION 54. EDITOR-IN-CHIEF**

The Editor-in-Chief is elected biannually and the term of office shall be for two (2) years.

### **ARTICLE II. DUTIES OF OFFICERS**

#### **SECTION 1. PRESIDENT**

Duties of the President are to (1) communicate activities of PSAAPG to the members at annual convention meetings and in the Newsletter, (2) be the voice of PSAAPG in dealings with government agencies, other geological societies, and the public, (3) liaise with AAPG on current and planned activities of PSAAPG, and provide written beginning-of-year business plan and end-of-year state-of-Section reports, (4) set meeting dates and agendas of Executive Committee meeting and chair meetings, (5) review standing and ad hoc committees and

appoint committee chairs, (6) define the annual goals of this Society, the Executive Committee, and the standing and ad hoc committees, (7) provide direction and assign projects to the ~~Vice-President and~~ President-Elect, and (8) serve as an ex officio member of the Pacific Section AAPG Foundation.

## **SECTION 2. PRESIDENT-ELECT**

Duties of the President-Elect are to (1) serve on the Executive Committee and at least one other committee, (2) perform ad hoc tasks assigned by the President or Executive Committee, (3) assist the President to develop goals of PSAAPG, (4) represent PSAAPG as needed on behalf of the President, and (4)(5) succeed the President should the office become vacant.

## **SECTION 3. PAST-PRESIDENT**

Duties of the Past-President are to (1) serve as chair of the Nomination Committee, and (2) act as mentor for the President and President-Elect.

## **~~SECTION 4. VICE-PRESIDENT~~**

~~Duties of the Vice-President are to (1) represent PSAAPG as needed on behalf of the President, (2) serve on the Executive Committee and at least one other committee, (3) perform ad hoc tasks assigned by the President and Executive Committee.~~

## **SECTION 54. TREASURER**

Duties of the Treasurer are to (1) keep the financial books of PSAAPG in order, supervise contracted bookkeepers and tax preparers, and interact with financial institutions, (2) pay invoices, expenses, and other debts of PSAAPG that are approved by the Executive Committee, (3) prepare and report financial statements for the Executive Committee, (4) serve on the Executive Committee and the Committee on Finance, (5) mentor the Treasurer-Elect, and (6) serve as an ex officio member of the Pacific Section AAPG Foundation.

## **SECTION 65. TREASURER-ELECT**

Duties of the Treasurer-Elect are to (1) serve on the Executive Committee and the Committee on Finance, and (2) prepare to assume the office of Treasure by performing activities at the direction of the Treasurer.

## **SECTION 76. SECRETARY**

Duties of the Secretary are to (1) take and archive minutes of meetings of the Executive Committee, (2) prepare and distribute agendas prior to meetings, (3) serve on the Executive Committee, and (4) assist the President with meeting logistics, organization and execution.

## **SECTION 87. EDITOR-IN-CHIEF**

Duties of the Editor-in-Chief are to (1) prepare and publish PSAAPG's Pacific Petroleum Geologist Newsletter, (2) supervise and edit information in PSAAPG's website, (3) serve on the Executive Committee, and (4) select a Webmaster, an Advertisement Coordinator, and an assistant Newsletter Editor.

## **ARTICLE III. MEMBERSHIP**

### **SECTION 1. MEMBERSHIP**

Membership in PSAAPG shall consist of the following classifications:

- a) Active Members
- b) Honorary Members
- c) Non-member Subscribers

### **SECTION 2. ELECTION TO MEMBERSHIP**

Every candidate for admission as a Member shall submit an application on an application form authorized by the Executive Committee and signed by the applicant. The Executive Committee shall be the sole judge of the eligibility of the applicant for membership and the adequacy of the applicant's qualifications. If the Executive Committee, after due consideration, judges that the applicant's qualifications meet the requirements of the Constitution and these By-laws, the committee shall cause to be published in the Newsletter or by other suitable means, the applicant's name. Any member, of whatever classification, who resigns, or who forfeits membership for nonpayment of dues ceases to have any rights in PSAAPG.

### **SECTION 3. DEFINITION OF TERM: "ACTIVE MEMBER"**

A member in good standing who is engaged in the practice of geology, the teaching of geology, or holds a degree in a geological science from a college of acceptable academic standards.

### **SECTION 4. DEFINITION OF TERM: "HONORARY MEMBER"**

The Executive Committee may honor each year the accomplishments and distinguished service to PSAAPG and profession by one or more Active Members by designating them as Honorary Members. The Active Member honored must be a member in good standing of PSAAPG. Honorary Members shall be exempt from all future dues of PSAAPG.

### **SECTION 5. DEFINITION OF TERM: "NON-MEMBER SUBSCRIBERS"**

Other persons, not qualified to be Active Members of PSAAPG may join and receive PSAAPG's publication "Pacific Petroleum Geologist Newsletter". Non-member subscribers shall not have the right to vote or hold office, but may otherwise participate in the activities of PSAAPG.

## **ARTICLE IV. COMMITTEES**

### **SECTION 1. STANDING COMMITTEES**

PSAAPG shall establish and maintain the following standing committees:

- a) Committee on Finance
- b) Committee on Membership
- c) Committee on Publications
- d) Committee on Directories
- e) Committee on Honors and Awards
- f) Committee on Conventions



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- f) Committee on Conventions

## **SECTION 2. APPOINTMENTS AND TENURE**

The President shall appoint all committee chairs and co-chairs and fill vacancies whenever they occur. The committee chairs and co-chairs shall appoint all vice-chairs and members for their respective committees. The Executive Committee may remove any committee chairs or co-chairs of the Standing Committees. The chair or co-chair may remove any vice-chair or member of their committees. The term of office of a member of a standing committee shall be one (1) year. Chairs may succeed themselves from year to year if reappointed by each succeeding President. The President may create at their discretion ad hoc committees and appoint chairs. Ad hoc committees have specific goals, are temporary, and expire at the end of the appointing President's term.

## **SECTION 3. COMMITTEE ON FINANCE**

The primary function of the Committee on Finance shall be to prepare a fiscal budget for approval by the Executive Committee. The Treasurer and Treasurer-Elect shall serve as ex officio members and no other member of the Executive Committee shall serve as member of the Finance Committee.

## **SECTION 4. COMMITTEE ON MEMBERSHIP**

The primary function of the Committee on Membership shall be to encourage applications for membership and to review and act upon such applications on behalf of, and with the approval of, the Executive Committee.

## **SECTION 5. COMMITTEE ON PUBLICATIONS**

The primary function of the Committee on Publications shall be to advise the Executive Committee on proposed publications, estimate costs and pricing and potential sales, oversee editorial and printing processes, handle the storage and sale of the publications and maintain adequate records of costs, sales and inventory. The Chair may name a member of the committee as Managing Editor and, upon approval of the Executive Committee, the Chair may assign a number of the listed Committee functions to the Managing Editor.

## **SECTION 6. COMMITTEE ON DIRECTORIES**

The primary function of the Committee on Directories shall be to update the membership directory of the Pacific Section of the American Association of Petroleum Geologists as directed by the Executive Committee. Compilation of the Directory shall be coordinated with the Pacific Coast Section Society of Exploration Geophysicists and the Pacific Section Society for Sedimentary Geology (SEPM) and it shall be formally published as mutually agreed upon.

## **SECTION 7. COMMITTEE ON HONORS AND AWARDS**

The primary function of the Committee on Honors and Awards shall be to recommend to the Executive Committee recipients for all honors and awards. All recommendations for these honors and awards by Section members or other Section Committees shall first be considered by this Committee before being presented to the Executive Committee for approval. Following Executive Committee approval, the awards will be presented at the Annual Convention of PSAAPG, or the Annual Convention of AAPG if held in California.

**SECTION 8. COMMITTEE ON CONVENTIONS**

The primary function of the Committee on Conventions shall be to initiate planning for the Section's Annual Convention, advise the Executive Committee on site selection and convention budgeting, and assist each year's Annual Convention's General Chair, as requested. The Committee will also assure that appropriate accounting standards and procedures are maintained. It will compile and maintain Convention records, statistics and guidelines for use by future Annual Convention General Chairs. The members of the Committee will include the Past-President, President-Elect, General Chair of the current Annual Convention; the General Chairs, when appointed, for the following three Annual Conventions and the President of the host Society of the current Convention.

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**The proposed changes may look familiar because they were previously presented to members in late 2023. A subsequent vote occurred, but because of procedural errors, accurate information was not conveyed to members and the vote was declared invalid by the Executive Committee. A new simpler voting system has been tested, and a re-vote on the proposed changes is ready to proceed.**

**Members will be contacted through your email within the next month and asked to vote either YES, to accept all the proposed changes, or NO, to reject the proposed changes. If you do not receive voting instructions, your membership may have lapsed. Please contact the Membership Chair, Simmie Chehal at [psaapg@gmail.com](mailto:psaapg@gmail.com), to update your membership.**

**Voting will be open from February 25, 2025 until March 2025.**



# Advertisements in the PSAAPG Newsletter

The Pacific Section- AAPG is revamping the advertisements included in the newsletter. This includes:

- New lower rates
- New Submission Method
- New Multiple Avenues of Advertising

Members	Single Issue	Year (6 issues)
Full Page	\$100	\$250
Half Page	\$50	\$125
Business Card	\$30	\$75

The PSAAPG will have a new form for you to submit your advertisement and payment. Link to form will be posted on PSAAPG Website and emailed to members and friends of PSAAPG soon.

What can you submit?

Market your business whether it be for geologic consulting, field trips, educational training/ courses.

Where will your advertisement be placed?

PSAAPG Newsletter (single issue and year-round package)

PSAAPG Website (year-round package only)

PSAAPG LinkedIn page (single issue and year-round package)

## Interview with a Geologist: Daniel Schwartz Interviewed by Amy Spaziani

For this month's newsletter, I had the honor, but also the daunting task, of interviewing Dr. Daniel Schwartz. Condensing his life full of accomplishments and experiences here in a few pages is nearly impossible. Many geoscientists (and engineers) know Dan for his volunteerism with AAPG, the Pacific Section, and the San Joaquin Geological Society, and cite his numerous professional publications, but peeling back the layers of positions that Dan has held in various locations around the world was incredible. I hope you will enjoy learning about Dan's story as much as I did.

Dan grew up in a suburb of Los Angeles, in what he describes as a "wonderful" childhood. His mother loved to travel, and they liked to collect rocks from their travels. He developed an interest in oceanography early on but realized in high school that undergraduate degrees in oceanography weren't common at that time. So, he pursued a bachelor's degree at Oregon State University in geology instead. He later transferred to the University of California, Berkeley, where he completed his undergraduate degree in geology. While Berkeley isn't what most would call a petroleum school these days, Dan had the opportunity to take a sedimentology/stratigraphy course in which the class project was to find oil over the course of a semester, similar to the Imperial Barrel contest in schools now. Dan was particularly drawn towards the multi-disciplinary aspect of the course, not only learning about sedimentology, stratigraphy and structure, but also concepts such as buoyancy and fluid migration. From Berkeley, Dan went to the University of Texas, Dallas to work under Peter Scholle, but unfortunately, Dr. Scholle left the week before Dan arrived in Dallas. After working with some professors in the department, Dan finally settled in on his dissertation work on Red River in Texas and the sedimentology of the braided to meandering transition zone. Dan graduated with his PhD in less than 4 years and, "not one to stick around in one place," he started looking for work.

Dan was interviewed by Shell Development Company for a sedimentologist position and subsequently started work at the Bellaire Research Center in Houston in 1978. In the research lab, Dan had the opportunity to work on reservoir projects all over the world, including Gulf of Mexico, Cameroon, and even Syria. Dan worked many exploration projects that led to discoveries in the Gulf of Mexico, such as Cognac, Mars and Bullwinkle, to name just a few. In 1979, Shell acquired Belridge Oil Company, which came with thousands of feet of core. Dan was put in charge of the diatomite reservoirs, spending a lot of time in the core warehouse in south Belridge and fighting off swarms of black widow spiders! Several new cores were also taken in the diatomite in new wells that led to numerous presentations and publications. Dan also described some of the outcrops in the Chico Martinez area, relating them to the core taken from Belridge. This work led into the exploration offshore in the Santa Barbara channel and San Maria basin, of which Dan was the head of the geology group.

In 1985, Dan left the research lab and went to California to be the chief geologist for Shell Western E&P, California. Dan oversaw the development programs from Los Angeles basin to Sacramento Basin in a functional based model. Dan later transferred to one of his favorite projects, the CO<sub>2</sub> and waterflood redevelopment program in Ventura, which was the first piloted CO<sub>2</sub> flood in California. This turned into more waterflood programs, in which core was used to determine swept and non-swept areas, identifying thief and high permeability zones. A lot of new injection methodologies and techniques were piloted, under his leadership as the Division Engineer.

The year 1992 brought an opportunity of a lifetime: a transfer to Aberdeen, Scotland, as the head of the production geology and geophysics. This was a dream job for Dan, working projects all over the North Sea and managing staff out of Aberdeen,

London, and Norwich, England. This also opened opportunities for travel for field courses, leadership meetings, and holidays all over Europe and even Egypt, something Dan still enjoys.

Dan returned to Houston in 1996, which was the beginning of the Royal Dutch Shell (RDS) takeover of Shell Oil Company (SOC) through acquisition of all shares of Shell Oil Company on the NYSE. This converted SOC into an operating company of RDS. Dan became the head of the business positioning team for acquisitions and deal structuring, completing projects in Senegal, Bolivia, Brazil, and Southern Europe to name just a few. Dan was involved in strategic planning with a group in the Hague, working one month in Houston and one month in the Hague. From there, Dan moved into Shell Capital, and the international producer finance position, to determine the market for Shell funding to smaller companies. Dan's territory was South America, including Brazil, Argentina, and Venezuela, providing capital to companies who made discoveries but did not have the funding to further appraise or develop the opportunity. Under this model, Dan developed new skills and contacts in the financial sector and frequented the South America region. Eventually, Shell decided that the global market for this service was too small, and the risk was too high to continue, so all the investments were sold off and those working on the projects found jobs elsewhere.

Following his financial positions, Dan worked his way from team leader to exploration manager, to chief geologist for Shell EP Americas. This meant a lot of mentorship of other geologists, making sure they had the proper training and development opportunities. Dan then went on to be the Chief Petroleum engineer for Shell International, a big promotion overseeing development projects from coalbed methane to deepwater, and even some early carbon sequestration. He served as technical assurance and reserves auditor for several years, in addition to making sure that the staff working on these projects were properly trained and had the required certifications to work in foreign countries or hire staff within the country. This involved travel all over South America, Southeast Asia, and Africa. During that time, Dan was also the exploration

manager for the deepwater Morocco venture. At this time, many companies had piqued interest in Morocco, but Dan recognized the high risk involved with the basin. He warned management that reservoir presence and quality was a major risk, due to the high flux of carbonates transported from the Atlas Mountains. Unfortunately, management moved forward shooting more seismic and drilling 4 commitment wells. As predicted, nearly all of the 20,000 ft wells were marl, and even though the risk had been flagged, it was time for Dan to find a new role.

Having grown up in California, it seemed to be the ideal time to transfer to Aera and go back home. Dan took a role assessing the resource play of the diatomite in the Midway Sunset oil field in the San Joaquin Basin, successfully identifying several opportunities for development. This led to an assignment on the unconventional project in Aera, focusing on acquiring acreage around San Joaquin Basin and putting together a portfolio of exploration projects, primarily in the Monterey, but also the Kreyenhagen. From here, Dan moved on to appraisal and development, among other roles. In 2014, Dan retired from Shell and was rehired in the same position at Aera the next morning. Dan retired from Aera at the beginning of 2017.

In 2017, Dan started Black Fox Resources, drawing on his contacts from his financial days to evaluate several opportunities for investment. He developed a partnership of experts including Stronghold Resource Partners out of Dallas and Driltek Company, based in California to focus on building oil and gas investments in California. Dan has been consulting since then, under Daniel E. Schwartz, LLC. His focus in recent years has been on carbon sequestration and permitting and hydrogen storage evaluation. Dan is a certified petroleum geologist and provides both classroom-based courses and field courses.

Dan met Cynthia after his move back to California with Shell, and they were later married. The couple has been an unwavering source of support for the San Joaquin Geological Society (SJGS) as well as the Pacific Section. For several years, Dan and



Cynthia opened their home to SJGS members and their families to host the Fall Fiesta, SJGS's fall kickoff and biggest scholarship fundraising event. Dan is very active with AAPG and PSAAPG, having served as general chairman for the joint PSAAPG-SEPM convention in Bakersfield in 1991; the Pacific Section President from 2013-14 and Past-President from 2014-2015; Pacific Section Scholarship Committee from 2012-2016; the Advisory Council representative to AAPG from 2020-2023; and Vice President of the Sections for AAPG from 2016-2018. Dan's publication list is extensive and has won multiple awards, including PSAAPG A.I. Levenson best paper award in 2016, Victor Church best poster award in 2018, and honorary life membership from the Pacific Section of AAPG and AAPG.

But perhaps Dan's greatest accomplishments have been the students and young professionals that

he's mentored and provided opportunities. Not only was he an avid supporter of scholarships through PSAAPG and SJGS, and through the endowment of Daniel E. Schwartz Opportunity Fund for geoscience students at the University of Texas, Dallas, but he served as an Imperial Barrel Award judge and team consultant for several years. He has provided informal mentorship to many young geoscientists at Aera and elsewhere. Dan's top advice to students and all geoscience professionals: get a firm understanding basic geologic concepts: stratigraphy, structure, and physics; particularly, buoyancy, fluid flow through porous media, reservoir and seal. In his spare time, Dan still enjoys traveling, and just returned from an epic trip to Antarctica and Patagonia. He shared some of his amazing pictures for this article. You can get in touch with Dan through LinkedIn ([linkedin.com/in/dan-schwartz-7942b865](https://www.linkedin.com/in/dan-schwartz-7942b865)).



Chinstrap penguins playing on basalt flows off the coast of Graham Land, Antarctic Peninsula. Photo by Daniel Schwartz.

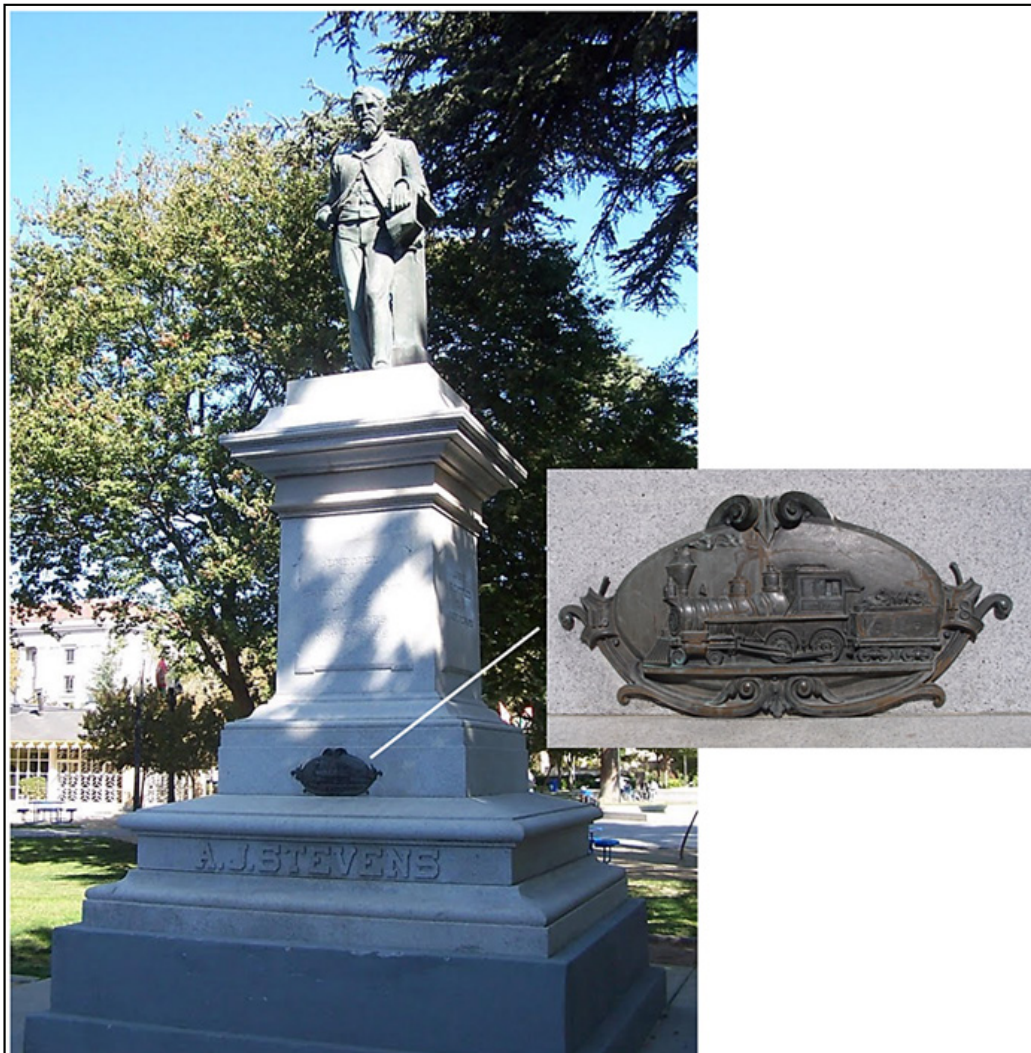


## The Man Behind the Name at Stevens Siding: A. J. Stevens

By Dan Steward

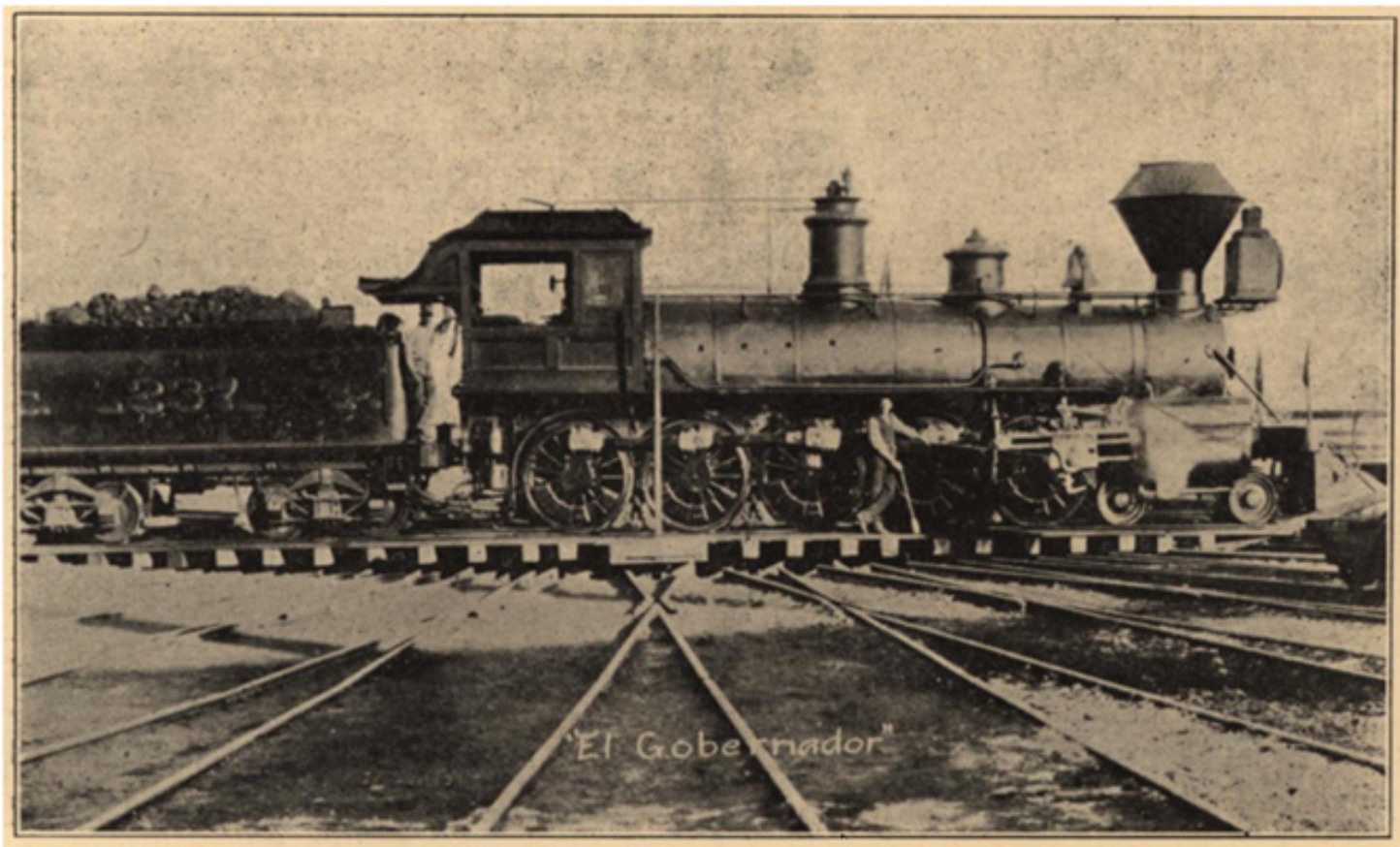
Andrew Jackson “A.J.” Stevens (1833 – 1888) was an extremely well-liked and respected Master Mechanic for the Central Pacific Railroad (CP) from late 1869 until his death. The CP was the parent company of the venerable Southern Pacific Railroad (SP), forever beloved by rail fans the world over, particularly in California.

In 1872 Stevens convinced the CP Board of Directors – names you’re likely to recognize: Leland Stanford, Collis P. Huntington, Mark Hopkins, Charles Crocker (“The Big Four”), James Bailey, and Licius A. Booth, to approve the construction of 10 steam locomotives at the CP’s Sacramento Shops: four, 25-ton 8-wheelers and six, 35-ton 10-wheelers. Once approved, the ability to construct their own locomotives in-house would be an economic bonanza for the Sacramento area and a once-in-a-lifetime experience for A.J.’s fellow employees.



A.J. Stevens’ statue in the Central Business District of Sacramento, California. Stevens’ co-workers erected the monument in November of 1889. The inscription amid the central column reads: “ERECTED TO A FRIEND OF LABOR BY HIS COWORKERS NOV 28, 1889”. *(Statue photo and information credit to Matthew Van Grinsven of CalGEM)*

From 1872 to 1882, Stevens supervised the construction of a number of locomotives with the culmination being the controversial #237 in 1883, “El Gobernador” (Spanish for “The Governor”), a 70-ton, 14-wheeled behemoth intended to handle freight and passenger trains over the Sierras east of Sacramento and the Tehachapi Mountains east of Sumner (Bakersfield), particularly the 2.2% grade of the Tehachapi Loop. Hopkins had a running dispute with Stanford over whether the massive unit should be built at all. El Gobernador’s weight required bridges to be reinforced and right-of-ways to be widened. When a “meet” was foreseen between trains, El Gobernador was allowed to stay on the mainline while freight and passenger trains took the sidings. Were such a unit to tip over on an uncompacted siding it would have required onsite disassembly to recover it.



**Central Pacific No. 237—The “El Gobernador”—BUILT by the C. P. R. R. at Sacramento Shops, 1883. A. J. Stevens, Master Mechanic.**

Despite its awesomeness, the 10 drive wheels proved its undoing: the locomotive suffered perpetual traction issues due to less-than-optimal weight per drive wheel. El Gobernador was scrapped in March of 1894.

Credit goes to Vic Cherven and Matthew Van Grinsven for their thoughts regarding the placename backstory to Stevens Siding and hence the provenance of the name “Stevens Sand.”

The Stevens Siding (in section 16, T30S R26E), located along the McKittrick Branch of the old SP’s rail network, though long gone, served a still-important agricultural district southwest of Bakersfield. It is possible that the McKittrick Branch was used by the SP during the development of the Canfield Ranch and Strand oil fields as the line passes nearly perfectly through both fields.





The site of Stevens Siding in Section 16, Township 30 South, Range 26 East – in the heart of the Bakersfield Arch petroleum province. The siding would have occupied the trough to the left of the current line and judging from the length of this space, was about 3,000' long. This portion of the McKittrick Branch remains active with rail customers along Rosedale Highway and at the current terminus in Buttonwillow. Both views are to the northwest.

Shell's A-1 well, later renamed the 1-29, was the discovery well at Ten Section and launched the phrase "Stevens Sand" into the minds of legions of geologists spanning decades, unwittingly popularized a man who was already popular in his day, and highlighted, however indirectly, the importance of rail transportation then and now.

The McKittrick Branch used to pass from Bakersfield to its terminal in McKittrick and today ends in Buttonwillow. The line is easily seen just off the south shoulder of Highway 58. There is an oilfield named after the right-of-way of the old McKittrick Branch. But that is another story.



The discovery well at the Ten Section oil field, 1-29. This well had an initial production of 744 barrels of oil per day and 12.45 million cubic feet of gas per day. These rates would be repeated across the field during its development phase through WWII and experienced at surrounding follow-on discoveries as well.

## Fossil Type Specimens and Species Named from National Park Service Areas in Alaska

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Eighteen national parks, monuments, and other National Park Service areas and affiliated sites are located within Alaska. These include some of the largest and most geologically diverse parks in the National Park System. Several of these are among the most significant in the NPS for paleontological resources, such as Denali National Park and Preserve (NP&PRES), Lake Clark NP&PRES, Wrangell-St. Elias NP&PRES, and Yukon-Charley Rivers National Preserve (NPRES). Together these NPS units preserve evidence of the complex geologic history of Alaska, assembled from disparate fragments of crust over hundreds of millions of years. The fossils in these rocks help to document this process by illustrating biogeographic connections with other places.

An important part of the study of fossils is describing and naming new species. Every fossil species is based on one or more specimens that are known as “type specimens”, intended to serve as a typical example of that species for comparison with other species. Because detailed locality information was not always published or even possible to determine in the early days of paleontology, the exact number of fossil species that have been named from fossils found in NPS lands is not certain. To date (August 2023), the type specimens for 2,361 fossil species have been confirmed to originate from localities within an NPS unit. Of that total, almost exactly 10% (236) were discovered in and collected from Alaska’s NPS areas. These 236 fossil species, plus two more potentially based on material from what is now Katmai NP&PRES, serve as a microcosm of NPS fossil species and the history of life in general. Of course, not all of these species are necessarily considered valid today, but this represents an impressive number.

Alaska’s NPS fossil type specimens come from nine park units (Table 1). These units are distributed throughout the state, from the Brooks Range to the Alaska Peninsula to the Panhandle. Most of the parks have fewer than two dozen, but Wrangell-St. Elias NP&PRES has 35, and Yukon-Charley Rivers NPRES has 129, which puts it at sixth place in the entire NPS for confirmed type specimens within an individual park.

Park	Confirmed	Potential
Aniakchak NM & PRES	2	0
Denali NM & PRES	6	0
Gates of the Arctic NM & PRES	13	0
Glacier Bay NM & PRES	9	0
Katmai NM & PRES	20	2
Lake Clark NM & PRES	21	0
Noatak NM & PRES	1	0
Wrangell-Str. Elias NM & PRES	35	0
Yukon-Charley Rivers NM & PRES	129	0
<b>Total</b>	<b>236</b>	<b>2</b>

Table 1. Distribution of fossil species named from Alaska’s NPS units.



Taxonomically, this record is dominated by fossil invertebrate taxa, followed distantly by plants, microorganisms, and trace fossils, in that order (Table 2). Notably, to date no fossil vertebrates have been named from body fossils found in Alaska’s NPS units. Within these broad categories numerous groups are represented (Table 3). Trilobites, ammonoids, angiosperms, ostracodes, brachiopods, and bivalves are particularly well-represented.

Group	Confirmed	Potential
Invertebrates	186	2
Plants	38	0
Microorganism	10	0
Trace Fossils	2	0

Table 2. Broad taxonomic distribution of fossil species named from Alaska’s NPS units.

Invertebrates	Plants	Microorganism	Trace Fossils
64 trilobites	34 angiosperms	9 radiolarians	2 bird tracks
43 ammonoids (+2 potential)	2 ferns	1 foram	
22 ostracodes	1 conifer		
19 brachiopods	1 ginkgo		
16 bivalves			
8 gastropods			
4 tentaculitids			
3 echinoid <sup>s</sup>			
2 belemnites			
2 nautiloids			
1 coral			
1 lobster			
1 sponge			

Table 3. Taxonomic diversity of fossil species named from Alaska’s NPS units.

The temporal distribution of the fossil species named from Alaska’s NPS areas is quite extensive, from a questionably Proterozoic occurrence representing one of the more unusual examples (*Brabbinthes churkini* from Yukon-Charley Rivers NPRES; see below) to the Pliocene (Figure 1). Almost every Phanerozoic period or sub-period is represented, most by more than a dozen taxa.

The history of this paleontological work in Alaska extends back more than 150 years (Figure 2). The oldest named fossils identified to date are from Eichwald (1871), with several fossil bivalves named from coastal areas now part of Lake Clark NP&PRES. Following this are several quiet decades, then a brief spurt in the 1920s and 1930s, a lull in the 1940s, then small numbers of taxa each decade except for the 1960s and 1970s. Most of the descriptions from the 1920s through the 1970s come from the work of the U.S. Geological Survey, and are frequently batches of names.

Within the peaks and valleys of the various charts are various works by particular authors. Some of the significant publications include:

- Berdan and Copeland (1973; Devonian ostracodes from Yukon-Charley Rivers NPRES)
- Hollick (1930; Cretaceous plants from Yukon-Charley Rivers NPRES)
- Hollick (1936; Cenozoic plants from several parks)

- Imlay (1960; Cretaceous ammonoids from Wrangell-St. Elias NP&PRES)
- Imlay (1964, Jurassic ammonoids from Lake Clark NP&PRES)
- Knowlton (1904; Oligocene plants from Katmai NP&PRES)
- Kobayashi (1934; Cambrian trilobites and brachiopods from Yukon-Charley Rivers NPRES)
- Palmer (1968; Cambrian trilobites from Yukon-Charley Rivers NPRES)
- Smith (1927; Triassic invertebrates from Wrangell-St. Elias NP&PRES and Yukon-Charley Rivers NPRES)
- Won et al (2002; Silurian radiolarians from Yukon-Charley Rivers NPRES)

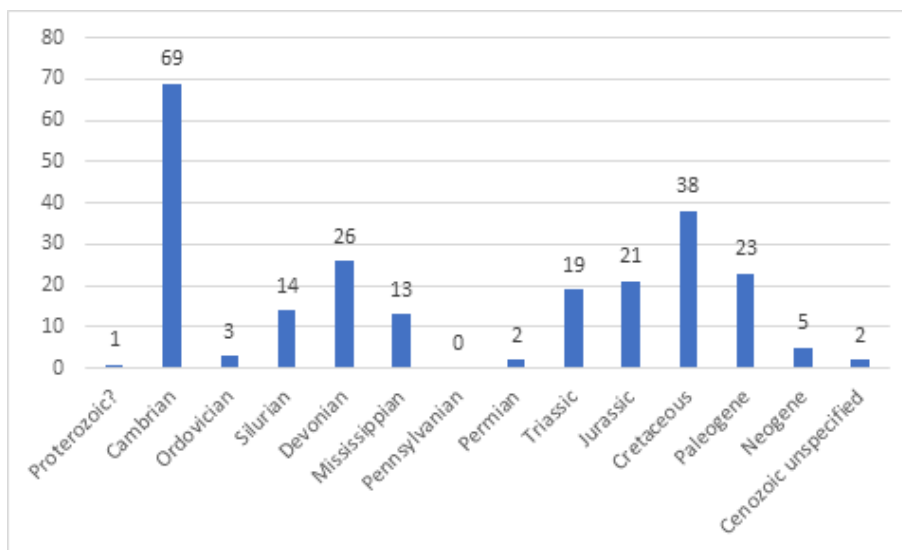


Figure 1. Temporal distribution of fossil species named from Alaska's NPS units (two unconfirmed Jurassic occurrences omitted).

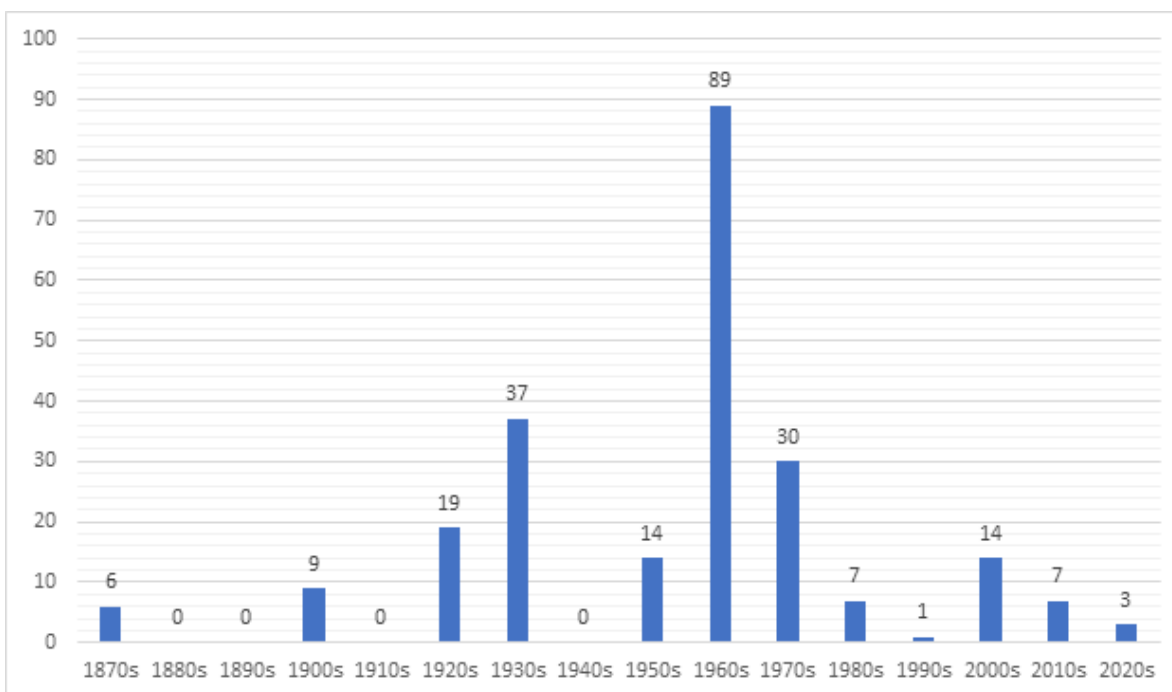


Figure 2. Chronology of fossil species named from Alaska's NPS units (two unconfirmed names from the 1900s omitted).

Each of the 238 taxa represent a piece of the mosaic that is the history of life on Earth. Some of the more unusual species include:

*Brabbinthes churkini* Allison (1975): This species was first described as a silicified Neoproterozoic flatworm from the “basalt and red beds” unit of the Tindir Group in Yukon-Charley Rivers NPRES (Allison 1975). Its identification and stratigraphic provenance were challenged by Cloud in Cloud et al. (1976), who proposed that the holotype was actually a section of a sponge spicule and found the correlation of the type locality to be questionable. Allison (1988) did not attempt to resurrect a flatworm identification but did not commit to any other identification, either, finding some structural differences from sponge spicules.

*Magnoavipes denaliensis* Fiorillo et al. (2011): One of many different ichnospecies found in the Upper Cretaceous Cantwell Formation of Denali NP&PRES, *Magnoavipes denaliensis* represents tracks left by a large crane-like bird that reached human heights.

*Pycnodesma giganteum* (Kirk 1927a): At roughly hand-sized, this is the largest known Silurian bivalve, and is only found in rocks of the Alexander Terrane. The type specimen comes from an islet off Willoughby Island in Glacier Bay NP&PRES. The genus was originally *Pycnodesma* (Kirk 1927a), but that name proved to be in use and *Pycnodesma* was substituted (Kirk 1927b).

Although many fossil species have already been named from the rocks of Alaska’s national parks, we can be sure that many more are yet to be described. In just the past three years three new species of brachiopods were described from the Devonian Shellabarger Limestone of Denali NP&PRES: *Carinagypa robecki* Blodgett et al. (2021) and *Clorinda cappsii* and *Ivdelinia (Ivdelinia) tweeti* Blodgett et al. (2022). Brachiopods have become an especially studied group in the past few decades, and other newly established species include *Myriospirifer breasei* Garcia-Alcalde and Blodgett (2001), also from the Shellabarger Limestone of Denali NP&PRES; *Alaskothyris frosti* Blodgett et al. (2015) from Devonian strata in Noatak NPRES; and *Sapelnikoviella santuccii* Blodgett et al. (2013) from late Silurian strata of the Willoughby Limestone, Glacier Bay NP&PRES. A gallery of some of these species follows the text (Figures 3–9). The complex and varied rocks exposed in the state’s NPS areas should continue to be fertile grounds for new discoveries.

## References

- Allison, C. W. 1975. Primitive fossil flatworm from Alaska: new evidence bearing on ancestry of the Metazoa. *Geology* 3(11):649–652.
- Allison, C. W. 1988. Paleontology of late Proterozoic and early Cambrian rocks of east-central Alaska. U.S. Geological Survey, Washington, D.C. Professional Paper 1449.
- Berdan, J. M., and M. J. Copeland. 1973. Ostracodes from Lower Devonian formations in Alaska and Yukon Territory. U.S. Geological Survey, Washington, D.C. Professional Paper 825.
- Blodgett, R. B., V. V. Baranov, and V. L. Santucci. 2015. *Alaskothyris* new genus (Family Stringocephalidae, Subfamily Rensselandiinae) from the Givetian (upper Middle Devonian) of the northwestern Brooks Range, northern Alaska. *New Mexico Museum of Natural History and Science Bulletin* 57:5-8.
- Blodgett, R. B., V. V. Baranov, and V. L. Santucci. 2022. Two new late Emsian (latest Early Devonian) pentameridine brachiopods from the Shellabarger Limestone (new Formation), Shellabarger Pass, Denali National Park and Preserve, south-central Alaska. *New Mexico Museum of Natural History and Science Bulletin* 90:73–83.
- Blodgett, R. B., A. J. Boucot, V. V. Baranov, and D. M. Rohr. 2013. *Sapelnikoviella santuccii*, a new gypidulinid brachiopod genus and species from the upper Silurian of Glacier Bay National Park & Preserve, southeast Alaska. *Memoirs of the Association of Australasian Palaeontologists* 44:65–72.
- Blodgett, R. B., V. L. Santucci, V. V. Baranov, and M. S. Hodges. 2021. The gypidulid brachiopod genus *Carinagypa* in late Emsian (latest Early Devonian) strata of the Shellabarger Pass area (Farewell terrane), Denali Park & Preserve, south-central Alaska. *New Mexico Museum of Natural History and Science Bulletin* 82:19–28.
- Cloud, P., J. E. Wright, and L. Glover. 1976. Traces of animal life from 620 million year old rocks in North Carolina. *American Scientist* 64(4):396–406.
- Eichwald, E. v. 1871. Geognostisch-palaeontologische Bemerkungen über die Halbinsel Mangischlak und die Aleutischen Inseln. Buchdruckerei der Kaiserlichen Akademie der Wissenschaften, St. Petersburg, Russia.

- Fiorillo, A. R., S. T. Hasiotis, Y. Kobayashi, B. H. Breithaupt and P. J. McCarthy. 2011. Bird tracks from the Upper Cretaceous Cantwell Formation of Denali National Park, Alaska, USA: a new perspective on ancient north polar vertebrate biodiversity. *Journal of Systematic Paleontology* 9(1):33–49.
- Garcia-Alcalde, J., and R. B. Blodgett. 2001. New Lower Devonian (upper Emsian) *Myriospirifer* (Brachiopoda, Eospiriferinae) species from Alaska and northern Spain and the paleogeographic distribution of the genus *Myriospirifer*. *Journal of the Czech Geological Society* 46(3–4):145–154.
- Hollick, A. 1930. The Upper Cretaceous floras of Alaska. U.S. Geological Survey, Washington, D.C. Professional Paper 159.
- Hollick, A. 1936. The Tertiary floras of Alaska. U.S. Geological Survey, Washington, D.C. Professional Paper 182.
- Imlay, R. W. 1960. Early Cretaceous (Albian) ammonites from the Chitina Valley and Talkeetna Mountains, Alaska. U.S. Geological Survey, Washington, D.C. Professional Paper 354-D.
- Imlay, R. W. 1964. Middle Bajocian ammonites from the Cook Inlet region, Alaska. U.S. Geological Survey, Washington, D.C. Professional Paper 418-B.
- Kirk, E. 1927a. *Pycnodesma*, a new molluscan genus from the Silurian of Alaska. *Proceedings of the United States National Museum* 71, article 20.
- Kirk, E. 1927b. *Pycnodesma*, a new name for *Pycnodesma* Kirk not Schrammen. *Journal of the Washington Academy of Sciences* 17:543.
- Knowlton, F. H. 1904. Fossil plants from Kukak Bay. 1904. Pages 149–162 in B. K. Emerson, C. Palache, W. H. Dall, E. O. Ulrich, and F. H. Knowlton. *Alaska. Volume IV: Geology and paleontology*. Doubleday, Page & Company, New York, New York.
- Kobayashi, T. 1935. The *Briscoia* fauna of the Late Upper Cambrian in Alaska with descriptions of a few Upper Cambrian trilobites from Montana and Nevada. *Japanese Journal of Geology and Geography* 12(3-4):39–57.
- Palmer, A. R. 1968. Cambrian trilobites of east-central Alaska. U.S. Geological Survey, Washington, D.C. Professional Paper 559-B.
- Smith, J. P. 1927. Upper Triassic marine invertebrate faunas of North America. U.S. Geological Survey, Washington, D.C. Professional Paper 141.
- Won, M.-Z., R. B. Blodgett, and V. Nestor. 2002. Llandoveryan (Early Silurian) radiolarians from the Road River Formation of east-central Alaska and the new family Haplotaeniaturmidae. *Journal of Paleontology* 76(6):941–964.

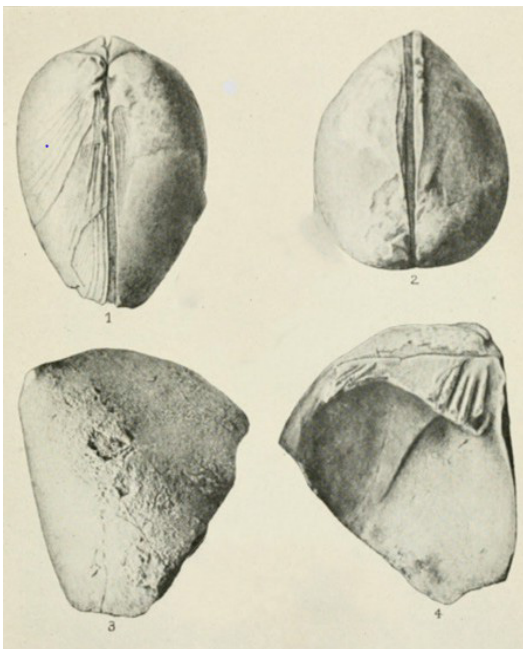


Figure 3. *Pycnodesma giganteum* (Kirk 1927a) from upper Silurian strata of the Willoughby Limestone, Glacier Bay NP&PRES. Articulated specimen, USNM 71275. Reposited at the United States National Museum (USNM), Washington, D.C.

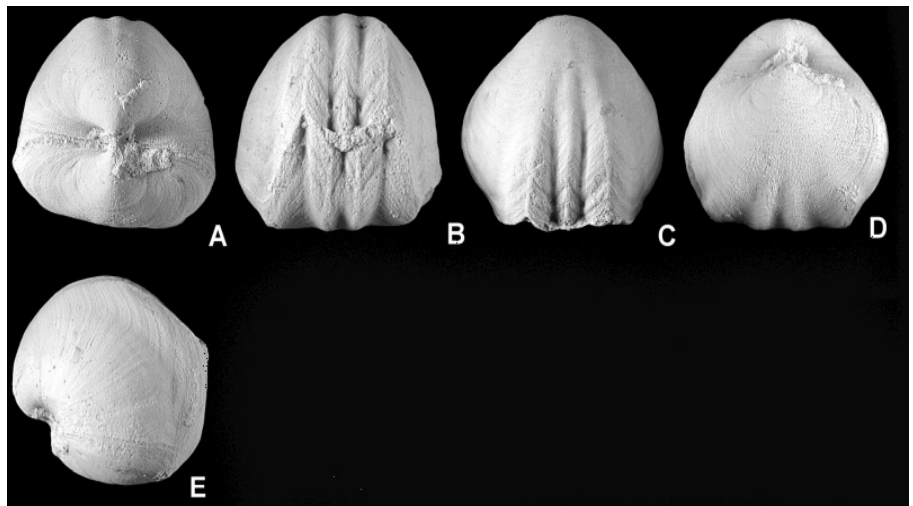


Figure 4. *Sapelnikovella santucci* Blodgett et al. (2013) from upper Silurian strata of the Willoughby Limestone, Glacier Bay NP&PRES. Articulated shell, UAMES 23259. Shell measures 9.4 mm in thickness. Reposited at the University of Alaska Museum of Earth Sciences collection (UAMES), Fairbanks, Alaska.



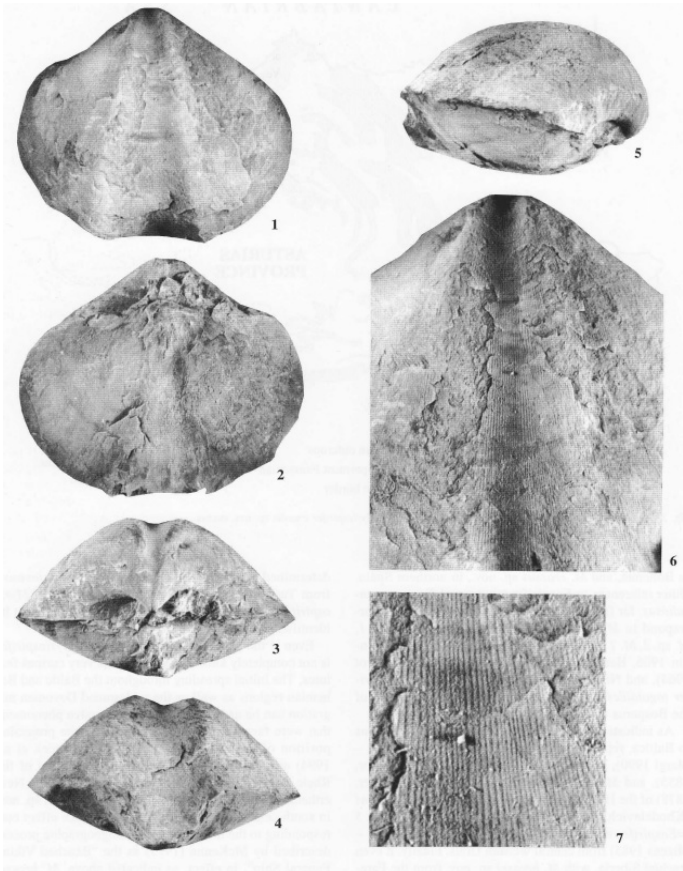


Figure 5. *Myriospirifer breasei* Garcia-Alcalde and Blodgett (2001) from the Devonian Shellabarger Limestone of Denali NP&PRES. Articulated specimen, UAM 2569. Shell measures 50 mm in thickness. Revisited at the University of Alaska Museum of Earth Sciences collection (UAMES), Fairbanks, Alaska.

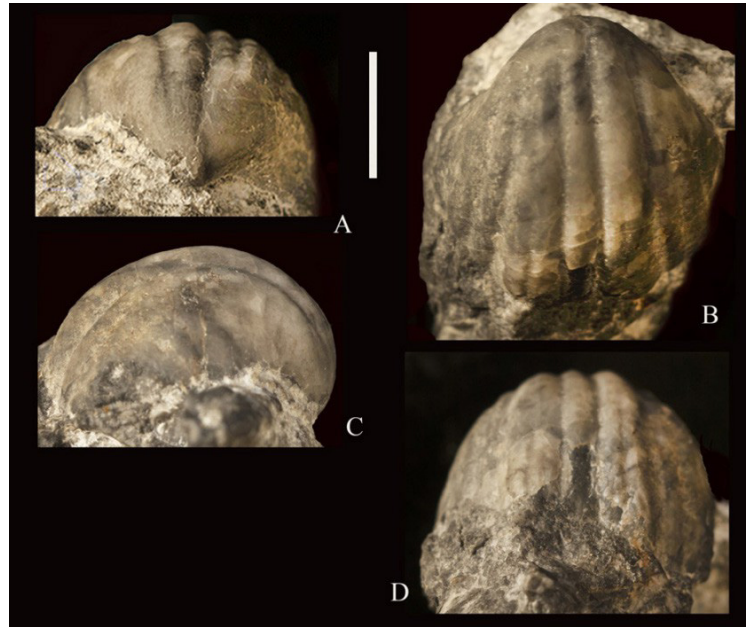


Figure 6. *Ivdelinia (Ivdelinia) tweeti* Blodgett et al. (2022) from the Devonian Shellabarger Limestone of Denali NP&PRES. Ventral valve, AKGMC-54. Scale bar = 1 cm. Specimen revisited at the Alaska Geological Materials Center (GMC), Anchorage, Alaska.

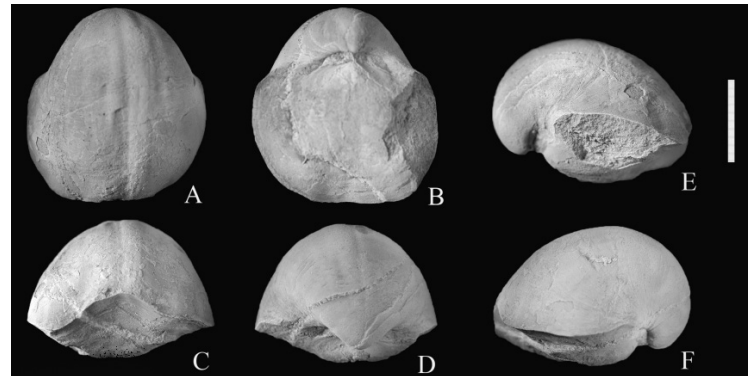


Figure 8. *Carinagypa robecki* Blodgett et al. (2021) from the Devonian Shellabarger Limestone of Denali NP&PRES. Articulated shell, AKGMC=4. Scale bar = 1 cm. Specimen revisited at the Alaska Geological Materials Center (GMC), Anchorage, Alaska.

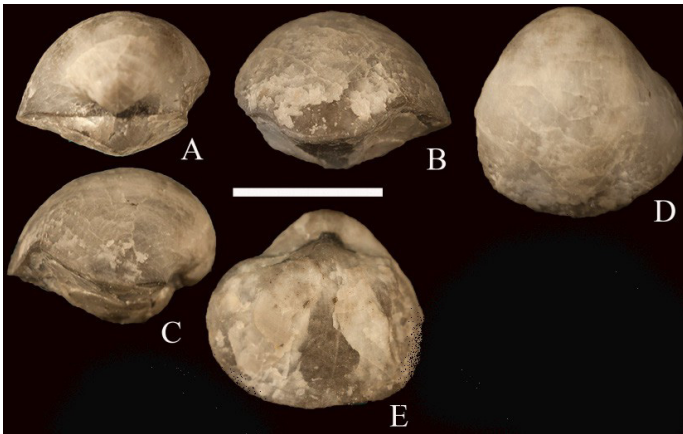


Figure 7. *Clorinda cappsi* Blodgett et al. (2022) from the Devonian Shellabarger Limestone of Denali NP&PRES. Articulated shell, AKGMC-56. Scale bar = 1 cm. Specimen revisited at the Alaska Geological Materials Center (GMC), Anchorage, Alaska.

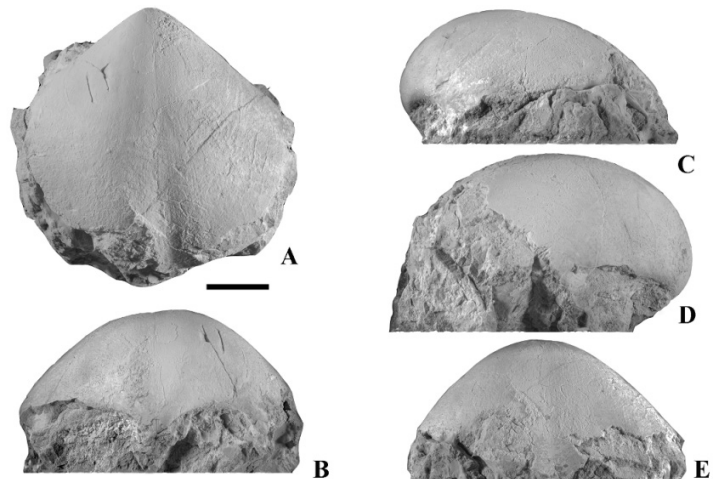


Figure 9. *Alaskothyris frosti* Blodgett et al. (2015) from the Devonian strata in the Noatak National Preserve. Ventral valve, USNM 604946. Scale bar = 1 cm. Specimen deposited at the United States National Museum (USNM), Washington, D.C.

Reprinted from the Bakersfield Californian January 1, 2025

*News of Interest to Members:*  
**CRC Gets EPA's First California Carbon Injection Permits**  
**By John Cox**

In another big step for Kern's nascent carbon management industry, the federal government issued four permits this week for injection of carbon dioxide more than a mile below the Elk Hills Oil Field for the purpose of addressing climate change.

The permit awarded Monday by the U.S. Environmental Protection Agency to a joint venture led by Long Beach-based California Resources Corp. is the first of its kind in the state. It followed a public comment process that elicited thousands of public comments, many of them skeptical of the technology.

An agency news release Tuesday said the proposed CO<sub>2</sub> injections will be done in a way that protects underground drinking water sources and public health. It noted CRC subsidiary Carbon TerraVault JV Storage Co. Sub 1 LLC will have to plug all abandoned wells in the area — 200 in all — before beginning injections. It also must meet federal operational standards and monitoring requirements.

The four Underground Injection Control Class VI well permits followed EPA meetings with county officials, emergency responders, property owners and community members, some of whom have expressed concern with the possibility of CO<sub>2</sub> leaks that could lead to mass asphyxiation.

EPA Pacific Southwest Regional Administrator Martha Guzman said in the release that the technology does not address methane emissions responsible for a third of global warming. But she added that it will capture and sequester CO<sub>2</sub>.

"I believe this permit is protective of the public and the environment," Guzman stated.

CRC's subsidiary, a partnership with Canadian-based Brookfield Asset Management Inc., will be required to maintain financial responsibility for the project for the life of the injection project, expected to last 26 years. After that time, the joint venture must properly decommission the site, for which it has set aside about \$30 million.

The plan is for Carbon TerraVault to build four injection

wells about 20 miles west of Bakersfield to inject about 1.5 million metric tons of CO<sub>2</sub> per year into the Monterey Formation. The EPA said the initial source of the gas will be the company's pre-combustion gas treatment plant in Elk Hills. Future CO<sub>2</sub> sources will have to be approved later by the same federal agency.

CTV will be required to track the CO<sub>2</sub>'s movement, monitor for potential leaks, post related data on a publicly available website, plan for emergencies and inform the public of any unanticipated event requiring an emergency response, the EPA release said.

An environmental group that has been critical of such projects, the Arizona-based Center for Biological Diversity, issued a statement calling the EPA's permit approvals reckless.

"The Carbon TerraVault project is stacked with false climate promises and rampant risks," stated Maggie Coulter, an attorney at the center's Climate Law Institute.

"The EPA's approval comes even as similar injection wells in Illinois are suffering unexplained, frequent leaks posing risks to drinking water. It's irresponsible to allow carbon injection into an oilfield full of idle wells without requiring monitoring in communities. This project needs to be stopped."

Before signing off on the permits, the EPA said it reviewed the area's historic seismicity data, geologic records and well information.

"Based on this review, EPA determined that the injection operations are unlikely to cause seismic activity or containment issues," it stated.

CRC said in its own news release Tuesday that the project is part of a larger effort to capture, transport and permanently store CO<sub>2</sub> for its customers.

"We are proud to have received the state's first Class VI permits, enabling us to advance critical clean energy projects in California," President and CEO Francisco Leon said in the release.

# Member Society News

## ATTENTION PACIFIC SECTION AAPG MEMBERS

- Do you have a talk you would like to give at a Pacific Section Society meeting?
- Most of the Pacific Section Societies are searching for talks to completed their monthly meeting schedules for 2025.
- You are encouraged to contact the Societies and inquire about the suitability of your talk for their audiences.

**Alaska Geological Society**  
www.alaskageology.org

P. O. Box 101288  
Anchorage, AK 99510

Monthly meetings are usually held on the last Thursday of the month. Most meetings are hybrids, using Google Meet, and in person at the BP Energy Center. Doors open 11:00 am.

Next meeting: March 12, 2025

Speaker: Roland Kirschner

Topic: Torok-age moraine reservoir on the NW edge of Kuparuk Field

April 8, 2025

Speaker: Gregory Beischer

Topic: Alaska Energy Metals

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Secretary:	Adam Manzer	adam.manzer@alaska.gov
Treasurer:	Veronica Jones	joneslynnveronica@gmail.com
Past-President:	Monte Mabry	mmabry@blm.gov

**Coast Geological Society**  
coastgeo.org

P. O. Box 3055  
Ventura, CA 93006

The Coast Geological Society has a new web site: [coastgeo.org](http://coastgeo.org).

The CGS is planning a Spring 2025 field trip to mark the 100th anniversary of the 1925 Santa Barbara Earthquake. Check the website for more information.

In-person meetings are the third Tuesday of the month at the Poinsettia Pavilion, 3451 Foothill Rd, Ventura, CA 93003

Check the website for infomation on the March meeting.

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Past-President:	Renee Richards	
Vice President:	Sabina Thomas	CoastGeologicalVicePresident@gmail.com
Secretary:	Nina Minga	CoastGeologicalSecretary@gmail.com
Treasurer:	David Arellano	CoastGeologicalTreasurer@gmail.com
Membership chair:	Phil Kinney	CoastGeologicalMembership@gmail.com
Webmaster/Tech Support:	Eric Heaton	CoastGeologicalWebmaster@gmail.com

(Continued on next page)



**Los Angeles Basin Geological Society**  
www.labgs.org

The LABGS Executive Committee has decided to trial run a nighttime meeting format at Four Sons Brewing in Huntington Beach (the Gothard St. location). Our first nighttime meeting is now planned for the 3rd Thursday of March – the 20th, with the attitude adjustment/social hour beginning at 6 PM, followed by dinners and the talk.

Check the website for updates on the speaker and to register for the dinner.

President:	Dan Steward	daniel@ironhorseenergy.com
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Treasurer:	Daniel Rice	ricedaniel@213@gmail.com
Secretary:	Joseph Landeros	landerosjd@gmail.com
Scholarships:	Karla Tucker	ktrk2@aol.com

**Northern California Geological Society**  
www.ncgeolsoc.org

803 Orion #2  
Hercules, CA 94547-1938

Meetings are at the Orinda Masonic Hall and online using Zoom on the fourth Wednesday of the month. Talks are 7:15 pm to 8:30 pm (social half-hour at 6:30 pm)

Next meeting: March 26, 2025

Speaker: Felipe González-Cataldo, UC Berkeley

Topic: A dive into planetary interiors: insights from matter at extreme conditions

April 30, 2025, "Student Speaker Night"

President:	Jim O'Brient	j.obrient @ comcast.net
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Past President:	Noelle Schoellkopf	NoellePrince @ sbcglobal.net
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Recording Secretary:	John Karachewski	
Membership Chair:	Tom Barry	tomasbarry@aol.com
Newsletter Editor:	Mark Sorensen	msorensen@gilbaneco.com

**San Joaquin Geological Society**  
www.sanjoaquingeologicalsociety.org

P. O. Box 1056  
Bakersfield, CA 93302

DINNER MEETINGS:

SJGS meetings are on the second Tuesday of the month at the American Legion Hall, 2020 H St Bakersfield, CA.

Check the web site for information on upcoming meetings.

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