THE GEOLOGICAL SOCIETY OF AMERICA®

GSA Position Statement

THE BENEFITS OF PROFESSIONAL GEOLOGIST LICENSURE

A geologist examines a freshly collected rock sample during fieldwork, using safety gear and a hammer against an exposed outcrop. Photo by Евгений Харитонов via Getty Images.

Position Summary. State and federal governments are encouraged to promote legislation that supports professional licensure for geologists and protect existing licensure requirements. Professional Geologist Licensure ensures that geoscience professionals specializing in fields related to public welfare, such as geohazards, water supply, environmental quality, natural resources and extractive industries (i.e., energy and mineral commodities), and infrastructure, have the necessary knowledge and expertise to properly address the challenges in these areas. As of July 2025 in the United States, 31 states plus Puerto Rico require licensure for geologists working in domains that affect public safety and health, but some states are attempting to eliminate licensure requirements (ASBOG, 2025b). Competency is essential for responsible and effective application of relevant geoscience principles, techniques, and data sets.

This position statement (1) summarizes GSA's consensus views in support of licensure for professional geologists (The Geological Society of America, 2019)[1]; (2) highlights some of the many aspects of applied geology where licensure is vital; (3) stresses the importance of support from governments, the private sector, and institutions of higher learning; and (4) provides a communication tool for use by GSA and its members to discuss why a strong commitment to professional geologist licensure is critical to public health, safety, and welfare.

Conclusions and Recommendations

A highly qualified workforce of licensed professional geologists is critical as societies address significant challenges with burgeoning populations, changing climate, and increasing demand for natural resources. Professional licensed geologists in applied fields have tremendous insight into the critical interface between the built environment and the geology on which it resides (The Geological Society of America, 2019). Licensure, in this context, pertains to geologists who apply their proficiency and knowledge in the responsible charge of their work, as an individual contractor, employee of a company, or state or local government employee who is required to be licensed. Geologists engaged in academic research, teaching, federal government oversight, or who are employed directly by energy and mineral companies that are involved in activities within their own domains (i.e., properties and leases) are typically exempt from professional licensure and are not the focus of this position statement.

Indeed, licensed geologists provide pertinent geologic data and interpretation that complement the civil construction societies need to function. In infrastructure projects, geologists assess local, regional, and deep subsurface rock materials, hazards, surface, and groundwater, while civil engineers design construction and foundations appropriate for the site's substrate (ASBOG, 2025a).

[1]This also includes geophysicists and soil scientists. Geologists and geophysicists are included in every State Geologists Licensure Board's Professional Code. Some licensure boards also include soil scientists.

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Geologist licensure promotes professionalism, expertise, and accountability in the public domain—ultimately benefiting the consumer, society, and the environment. This is similar to other credentialed professions that advance public protection, such as medicine, architecture, and engineering. Licensure also enhances career growth and earnings for the practitioner, as the bearer has demonstrated competence and ethical behavior in the practice of geology.

- **Governments should support legislation for geologist licensure.** Geology licensure programs (i.e., State Professional Geologist Licensure Boards) provide direct oversight of practicing professionals. Boards establish and maintain the minimum level of competency in the profession, promote accountability, and have the legal authority to conduct investigations of deficient work, consumer complaints, and issues of malfeasance.

- **Licensure assists geoscience departments in maintaining a consistent core of geology courses.** Workforce requirements, such as those practicing applied geology to be licensed, have a strong influence on higher-learning criteria (King, 2013). The ability of geologic practitioners to make qualified observations of earth materials, geologic structures, geophysical and geochemical data, and evidence of natural hazards, and offer sound scientific interpretations is rooted in the geoscience curricula.

- **Institutions of higher learning should inform students of the value and importance of being a licensed professional**. Earth science departments should maintain college-level course work to prepare future geologists for applied work in areas outside academia and research (ASBOG, 2021).[2] Subject matter germane to the Association of State Boards of Geology (ASBOG®) Fundamentals of Geology (FG) exams should be incorporated into geology classes. This may include workshops or courses to demonstrate the value of professional licensure and prepare students for the necessary examinations and internships with professional geologists in their region (ASBOG, 2022). Geoscience majors should be encouraged and incentivized to take the FG exam as soon as they have completed the requirements of their major.

- **Geologists should promote partnerships with engineering departments and engineering professional societies to expand awareness of the geologist licensure credential** and the importance geology has in certain engineering fields (e.g., civil, environmental, mining, geotechnical, agricultural).

- **Advocating for the licensing of geologists requires reaching out and educating elected officials, corporate partners, and the public about the critical role that qualified licensed geologists play.** Fostering partnerships with industry, institutions of higher learning, professional societies, and communities is necessary to most effectively lobby state legislatures and Congress on behalf of professional geologist licensure, and to reduce the potential costs of allowing unqualified geologists to practice in ways that may result in adverse outcomes.

Rationale

Geologists seek to understand the complex processes that forged Earth's physical structure, composition, environments, and climate. To wisely manage Earth's resources, ensure public health and safety, improve societal welfare, and support sustainable growth, the public is best served by geologists that meet professional requirements of education, experience, competency, ethics, and accountability. For applied professionals, geologist licensure maintains professional standards and prioritizes societal safety, health, and well-being. Professional licensure of geologists provides pathways to avoid unnecessary and adverse outcomes, as the licensee must assume a greater degree of responsibility than their non-licensed peers (i.e., licensees must attest to the veracity and integrity of their data collection, analyses, and interpretations).

Professional geologist licensing in the United States is regulated by the individual states. Candidates must meet specific coursework requirements in their educational preparation and complete three to seven years of qualifying experience under the supervision of a licensed professional geologist before becoming eligible for licensure (ASBOG, 2022). Candidates must successfully pass two rigorous national-level examinations, administered by ASBOG®. It is recommended that the FG exam be taken right after completion of the undergraduate degree, although some states allow it to be taken before graduation. Twenty-two states plus Puerto Rico then list the

[2]According to the ASBOG®, analysis of pass-fail data from 2008 to 2021 of the Fundamentals of Geology (FG) examination indicates that about 35% of the applicants who take the exam lack geologic knowledge at a fundamental level (ASBOG, 2021). Additionally, about 25% of applicants taking the Practice of Geology (PG) examination lack the knowledge and/or experience at a professional level for public protection, at a minimum competency level.

successful candidate as a Geologist-in-Training. The Practice of Geology (PG) exam is taken after the required years of work experience are completed. These examinations ascertain the candidate's capacity for professional practice. Several states require subsequent Continuing Education Units (CEU) to maintain professional licensure. Geologists who do not live in a state that provides licensure can instead receive their license from another state, which can enhance their résumé and reputation.

At present, in the United States, some levels of government are promoting less regulation; some state legislators and executive officers are attempting to eliminate the safeguards provided by licensure (Enviro-Equipment, Inc., 2012; Visconti, 2020; Duda, 2016; Neal and Stohr, 2017; Halff Associates, Inc., 2018; Díaz Torres, 2020; WKRN, 2020), which can leave gaps in monitoring and oversight roles. In addition, the U.S. Environmental Protection Agency published a rule that excludes professional geologists from any compliance oversight with coal ash waste management (U.S. EPA, 2025), an area that is very germane to the geosciences. Yet all 50 states and Washington, D.C., require engineers to be individually licensed in order to protect public safety. As of July 2025, 31 states and Puerto Rico require geologists to have some form of licensure (ASBOG, 2025b). At least nine of those licensure laws are currently, or have been recently, threatened (Enviro-Equipment, Inc., 2012; Visconti, 2020; Duda, 2016; Neal and Stohr, 2017; Halff Associates, Inc., 2018; Díaz Torres, 2020; WKRN, 2020).

Professional geologist licensure is a product of legislation that, consequently, establishes the legal oversight, professional standards, and enforcement authority within its state or territory (and, if applicable, any interstate agreements). Professional licensure offers broader jurisdiction and greater public protection than professional certifications and registrations conferred by some geoscience societies (Tepel, 1995). These may be general, like the Certified Professional Geologist (CPG) of the American Institute of Professional Geologists (AIPG; Garcia, 2025), or specialty-related, such as those associated with fossil-fuel or mineral-industry associations. Such accreditations require several years of relevant work experience and references from other certified geologists but may not necessarily entail thorough examination of knowledge. While these certifications may be recognized nationally and/or internationally, and certified geologists may function as expert witnesses or do due diligence, they have no legal authorization to act as regulatory agents.

Areas of licensed geologist practice (ASBOG, 2025c) include:

- **Natural Resource Management:** Mineral-resource evaluation; oil and gas development; mined-land reclamation; acid mine drainage suppression and remediation; groundwater investigations; energy infrastructure siting.

- **Risk Assessment and Mitigation:** Geohazards, including floods, sinkholes, earthquakes, landslides, volcanic eruptions; land surface stabilization; risk analysis (insurance and reinsurance industries).

- **Environmental Protection:** Environmental impacts related to natural resources extraction, soil and water quality, and climate change effects; maintaining the integrity of ecosystems and natural habitats; accurate and reliable geologic/environmental data acquisition (and reporting to government agencies) for public use; safe solid waste management; toxic, nuclear, and hazardous waste disposal siting and management; contaminated soil investigations and remediation.

- **Climate Change Adaptation:** Assessing vulnerabilities, mitigation strategies, and increased resilience to climate-induced challenges (e.g., sea-level rise, extreme weather events, shifting precipitation patterns, and human migration).

- **Other Specific Practice Areas:** Geologic mapping; dam and impoundment construction; highway, roadway, and bridge construction.

Encouraging workforce standards by promoting professional licensure for geologists can reduce risks posed to the public and the environment. Licensure ensures that those engaged in the professional practice of geology possess the necessary training, knowledge, and ethical standards to conduct the appropriate geological work accurately and responsibly (ASBOG, 2025a). Potential risks of non-licensure include:

1. The possibility that an error may cause damage to property and loss of life;
2. Greater costs from incorrect and incomplete work;
3. Greater costs of supervision; and
4. Lower cost/benefit ratios brought about by an inability to do efficient work.

REFERENCES CITED

ASBOG (National Association of State Boards of Geology), 2021, A Cross Sectional View: https://asbog.org/crosssection/CrossSection_Nov_2021.pdf (accessed August 2025).]

ASBOG, 2022, State Requirement Matrix: https://asbog.org/matrix/ASBOG_Matrix–Oct%202022_11x17.pdf (accessed August 2025).

ASBOG, 2025a, Why Licensure: https://asbog.org/governance/licensure.html (accessed August 2025).

ASBOG, 2025b, State Index: https://asbog.org/state_boards.html (accessed August 2025).

ASBOG, 2025c, Tasks of a Professional Geologist: https://asbog.org/documents/ASBOG_tasksofgeologist.pdf (accessed August 2025)

Díaz Torres, R., 2020, Geologists in Puerto Rico have been unlicensed during seismic emergency period due to government inefficiency: https://periodismoinvestigativo.com/2020/10/geologists-in-puerto-rico-have-been-unlicensed-during-seismic-emergency-period-due-to-government-inefficiency/ (accessed August 2025).

Duda, J., 2016, Much work remains on Ducey professional licensing bill: https://azcapitoltimes.com/news/2016/02/17/commerce-committee-approves-bill-to-deregulate-geologists-yoga-instructors/ (accessed August 2025).

Enviro-Equipment, Inc., 2012, Deregulation of Geologists in South Carolina: https://www.enviroequipment.com/newsletter/south-carolina-geology-licensure (accessed August 2025).

Garcia, D., 2025, Professional Licensure and Certification of Geologists: AIPG's Professional Certification: https://cdn.ymaws.com/aipg.org/resource/resmgr/documents/power_point_presentations/2025aipg_prof_certification.pdf (accessed August 2025).

Halff Associates, Inc., 2018, Regulation of Professional Geoscientists at stake with Sunset Commission decision: https://www.halff.com/news-insights/%25type%25/regulation-of-professional-geoscientists-at-stake-with-sunset-commission-decision/ (accessed August 2025).

King, D.L., 2013, Geological Education Today: The Professional Geologist, v. 50, no. 5, p. 40–42.

Neal, K., and Stohr, C., 2017, Successfully resisting the repeal of Illinois' Professional Licensing Act—The Chicago way: https://aeg.memberclicks.net/assets/Licensure/AEGNewsarticleonIllinoisLicensure2017AUG1.pdf (accessed August 2025).

Tepel, R.E., 1995, Professional Licensure for Geologists: An Exploration of Issues: Association of Engineering Geologists Special Publication No. 7, p. 11.

The Geological Society of America, 2019, Position statement: The role of the geoscientist in assuring the safety and integrity of infrastructure: https://www.geosociety.org/GSA/Science_Policy/Position_Statements/Current_Statements/gsa/positions/position5.aspx (accessed August 2025).

U.S. Environmental Protection Agency, 2025, Disposal of Coal Combustion Residuals from Electric Utilities Rulemakings: https://www.epa.gov/coalash/coal-ash-rule (accessed August 2025).

Visconti, A., 2020, Florida passes the most comprehensive deregulation bill to date: https://ascend.thentia.com/insight/florida-deregulation-occupational-licensing-requirements (accessed August 2025).

WKRN, 2020, Tennessee bill would remove license requirements for 25+ jobs: https://www.wkrn.com/news/tennessee-bill-would-remove-license-requirements-for-25-jobs/ (accessed August 2025).

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About the Geological Society of America

The Geological Society of America, founded in 1888, is a scientific society with members from academia, government, and industry in more than 100 countries. Through its meetings, publications, and programs, GSA enhances the professional growth of its members and promotes the geosciences in the service of humankind. Headquartered in Boulder, Colorado, USA, GSA encourages cooperative research among earth, life, planetary, and social scientists, fosters public dialogue on geoscience issues, and supports all levels of earth science education. Inquiries about GSA or this position statement should be directed to GSA's Director for Geoscience Policy and External Relations, Emily Orzechowski at eorzechowski@geosociety.org.

Opportunities for GSA and Its Members to Help Implement Recommendations

- Interface with government, public officials, and institutions of higher education (especially in states without geologist licensure) and provide expert input on the value and relevance of licensed applied geologists.

- Track and monitor legislative activity pertaining to professional geologist licensure and relay developments to the membership.

- Work with local and regional planning offices, engineering departments, emergency management agencies, water resources boards, and agricultural services to inform them of the benefits of including licensed geologists in their current and future endeavors. This might include field excursions to highlight specific engineering, environmental, and land management issues.

- Partner with ASBOG® and promote geologist licensure at national and regional meetings of professional earth science and engineering societies (e.g., The Geological Society of America, American Geophysical Union, American Society of Civil Engineers). GSA members can share personal experiences and success stories through mentoring programs, short courses, topical sessions, and serving as volunteers at resource booths. Invite legislators and public officials to engage with licensed members at meetings and ancillary social events.

- Encourage college educators in earth science departments to obtain a professional geologist license. College instructors are well positioned to inform students about geologist licensing and its importance. Education professionals who obtain a PG license should be recognized for their achievement in career advancement reviews.

- Advocate for higher education earth science programs to maintain curricula that provide adequate instruction in the core geologic disciplines (e.g., mineralogy, petrology, stratigraphy, structural geology, and hydrogeology and other Earth-surface processes), which are a necessary foundation on which to build the expertise required of a licensed professional geologist. Incorporate the pertinent concepts of the ASBOG® FG exam into department courses.

- Recommend testing of the ASBOG® FG exam as soon as students have completed their core geoscience coursework.

- Professional and academic members of GSA can provide quality applied science continuing educational opportunities through GSA and member societies to help licensees meet their continuing education requirements.