

# [***ARTICLE: HYDRAULIC FRACTURING: HOW TO COMBAT THE DANGER TO COLORADO'S MUNICIPAL WATER SUPPLY?***](https://advance.lexis.com/api/document?collection=analytical-materials&id=urn:contentItem:646C-51S1-FC6N-X32C-00000-00&context=1516831)

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**Author:** MERRILY NEWCOMB

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**[\*1]**

**Introduction**

In the United States, three main legal doctrines guide water law: the riparian doctrine, the prior appropriation doctrine, and hybrid systems. [[1]](#footnote-2)1Eastern states employ the riparian doctrine, which allows the owner of land adjacent to a waterbody to make reasonable use of the water. [[2]](#footnote-3)2Most Western states, like ***Colorado***, apply the prior appropriation doctrine. [[3]](#footnote-4)3Other states employ a hybrid system that combines elements of both riparian and prior appropriation systems. [[4]](#footnote-5)4Each hybrid system balances the doctrines differently. [[5]](#footnote-6)5This Article focuses on the regulatory scheme within ***Colorado***.

***Colorado*** is in the arid west, where water resources have always been scarce and precious. [[6]](#footnote-7)6Because the state's geography isolated its fertile land from streams and lakes, ***Colorado*** adopted the prior appropriation system. [[7]](#footnote-8)7Early cities, like the City and County of Denver, have always relied heavily on water from the mountains in the Continental Divide. [[8]](#footnote-9)8Approximately 85 percent of **[\*2] *Colorado***'s population resides on the eastern slope while about 85 percent of ***Colorado***'s precipitation occurs on the western slope. [[9]](#footnote-10)9

Thus, ***Colorado*** embraced prior appropriation, which allows a person to divert water and put it to beneficial use wherever necessary. "First in time, first in right" is the core mantra of ***Colorado***'s water allocation system; it prioritizes senior appropriators over junior appropriators. [[10]](#footnote-11)10To perfect a water right in ***Colorado*** under prior appropriation, a person must: (1) demonstrate an intent to beneficially use the water; (2) actually divert the water; and (3) put the water to beneficial use within a reasonable time. [[11]](#footnote-12)11

Due to the nature of prior appropriation, hydraulic fracturing ("fracking") operators must reconcile their water diversions within a priority system where there is fierce competition for water resources. ***Colorado***'s rising population has only intensified competition for water among oil and gas, irrigated agriculture, and municipal users. [[12]](#footnote-13)12Scientists also predict that climate change will increase the susceptibility of semi-arid regions to drought and further stress water supplies. [[13]](#footnote-14)13To avoid the prior appropriation system altogether, fracking operators often lease water from municipal suppliers, such as cities and municipalities. [[14]](#footnote-15)14Municipalities can lease both surplus raw water before or after treatment and treated water that has been released into streams. [[15]](#footnote-16)15Municipalities can only lease water that has been released into streams if the water right includes uses for well construction and the Division of Water Resource's Division Engineer approves. [[16]](#footnote-17)16

Fracking's water demands are particularly draining on ***Colorado***'s depleted water resources because fracking diverts water resources from municipalities and creates a by-product of unusable water, barring re-use for any purpose outside of oil and gas. [[17]](#footnote-18)17Although fracking is an established practice, it was not until 2003 that it began to move to the forefront of energy development. [[18]](#footnote-19)18The fracking boom increased oil and gas operators' need for water because fracking, **[\*3]**especially horizontal fracking, requires water to function. [[19]](#footnote-20)19This consumptive use of leased water will inevitably lead to harm. To avoid a crisis in the future, ***Colorado*** must recognize water as a public resource and protect it accordingly.

This Article will discuss the negative impact fracking could have on future water supplies in terms of availability and quality of water. This Article will first discuss the impact of fracking's process and background on water resources, which suggests that fracking is consumptively using water and degrading water quality. Then, this Article will discuss how ***Colorado*** can protect water from fracking by fully recognizing the full scope and dimension of water as a public resource.

**Fracking**

THE PROCESS AND BACKGROUND

Fracking is the process of injecting special fracking fluids into underground geological formations to release trapped oil and gas into a wellbore. [[20]](#footnote-21)20After an operator injects fracking fluid into the ground, the fluid typically returns to the surface of the well over time. [[21]](#footnote-22)21The surfaced fluid consists mostly of the fracking fluid at first, but eventually contains oil or gas that is later separated. [[22]](#footnote-23)22The water that is left over after the oil or gas is extracted is called produced water. [[23]](#footnote-24)23The ***Colorado*** Oil and Gas Conservation Commission ("COGCC") estimates that as of 2017, 55,062 active oil and gas wells existed in ***Colorado***. [[24]](#footnote-25)24

FRACKING'S IMPACT ON WATER RESOURCES

The rise of fracking contributed to the advent of directional drilling and operators' increased utilization of horizontal drilling. [[25]](#footnote-26)25Experts consider horizontal drilling more economical because it exposes more of the rock formation, and thus, more oil or gas. [[26]](#footnote-27)26However, notably, horizontal fracking requires more water than vertical fracking. [[27]](#footnote-28)27As fracking continues to operate at greater proportions, the public is increasingly questioning its impact on water. [[28]](#footnote-29)28Many associate the following concerns with fracking: 1) the amount of water used; 2) the **[\*4]**chemicals mixed with water to create the special fracking fluid; and 3) the proximity of wells to other water systems. [[29]](#footnote-30)29

Fracking operations generally use fresh groundwater or surface water located around a well. [[30]](#footnote-31)30According to the Environmental Protection Agency ("EPA"), the median amount of water used per fracking well from a reported 4,898 wells in ***Colorado*** was about 1,754 cubic meters between 2011 and 2013. [[31]](#footnote-32)31Another study calculated that the median amount of Hydraulic Fracturing water used in the South Platte between 2003 and 2014 was 11,000 cubic meters for horizontal wells and 1,000 cubic meters for vertical wells. [[32]](#footnote-33)32Additionally, the same study found that the average amount of water used for horizontal wells in the South Platte in 2014 was 14,000 cubic meters. [[33]](#footnote-34)33

*In 2014, fracking constituted a total of 0.24 percent of* ***Colorado****'s consumptive water demand; 0.73 percent of the South Platte Basin's water demand; 2.44 percent of Weld County's water demand; and 6.9 percent of Greeley's water demands.* [[34]](#footnote-35)34*Notably, one EPA study stated that fracking does not significantly nor negatively impact drinking water availability in the Upper* ***Colorado******River*** *Basin.* [[35]](#footnote-36)35*Yet, the study did not consider fracking operations using municipal water supplies.* [[36]](#footnote-37)36***Colorado****'s municipalities face water shortages as a result of increased water consumption demands that fracking likely will only exacerbate.* [[37]](#footnote-38)37*The amount of water that fracking used in 2014 in Weld County was equivalent to a yearly supply of water for 93,900 people.* [[38]](#footnote-39)38*For municipalities, fracking's water demand is high and poses a significant risk to their water supply.*

*Not only is the amount of water fracking consumes significant, the practice also poses potential environmental risks through produced water, qualified as waste product, which is subsequently disposed of via injection wells into the subsurface.* [[39]](#footnote-40)39*A joint report by various* ***Colorado*** *agencies states that most fracking operations use a special fluid made up of 90 percent water, 9.5 percent sand, and 0.5 percent other chemicals.* [[40]](#footnote-41)40*The other chemicals vary based on operators, and the EPA states that operators used 1,084 chemicals in fracking wells between 2005 and 2013.* [[41]](#footnote-42)41*The EPA reported three chemicals in over 65 percent of wells - methanol, hydrotreated light petroleum distillates, and hydrochloric acid.* [[42]](#footnote-43)42*These chemicals comprise only a small portion of fracking fluid but are the main factor barring re-utilization or recycling of produced water for any use outside of oil and gas projects.* [[43]](#footnote-44)43*After mixing these chemicals in to water,* ***[\*5]****treating the fracking fluid is typically not feasible, and the fluid becomes a waste product.* [[44]](#footnote-45)44

*Produced water and the chemicals stored on-site can also reach surrounding ground and surface water through spills.* [[45]](#footnote-46)45*The EPA has documented spills of fracking fluid ranging from 28 to 7,350 gallons reaching a surface water body.* [[46]](#footnote-47)46*The known risk of spills makes fracking wells located near water systems especially concerning.* [[47]](#footnote-48)47*The EPA estimates that nationwide, there were 3,900 public water systems located within one mile of a fracking well from 2000 to 2013.* [[48]](#footnote-49)48*In 2013 alone, these public water systems provided water to over 8.6 million people.* [[49]](#footnote-50)49*Yet, there are debates about a potential link between negative impacts of drinking water and fracking.* [[50]](#footnote-51)50*One study argues that it is doubtful fracking can pollute groundwater due to the current techniques used, the improbability that fracking fluid could migrate through thousands of feet of rock, and the direction of permeability in the rock formations.* [[51]](#footnote-52)51*However, several studies state that there is a lack of comprehensive and site-specific data regarding fracking's impact on water quality.* [[52]](#footnote-53)52*Groundwater and its underground system is immensely complicated, and without further study, no one can conclusively state that fracking is highly unlikely to pollute groundwater.* [[53]](#footnote-54)53*Moreover, the EPA acknowledges that spills at fracking sites are a known risk to surface water.* [[54]](#footnote-55)54

*Fracking presents a considerable threat to municipal water because of its water demands, its pollution, the proximity of wells to public water systems, and the risks to nearby surface and groundwater. Every drop of water in the arid state of* ***Colorado*** *is precious, and the imminent ramifications from fracking operations on water availability and quality in* ***Colorado*** *are apparent and alarming.*

**Water as a Public Resource**

The ***Colorado*** Oil and Gas Conservation Act (the "Act") is the primary statute regulating the development of oil and gas in ***Colorado***. [[55]](#footnote-56)55The Act creates and directs the COGCC to balance oil and gas development alongside public safety and welfare. [[56]](#footnote-57)56Yet, local governments often promulgate local regulations concerning oil and gas so long as these regulations do not significantly conflict **[\*6]**or impede state regulations. [[57]](#footnote-58)57The ***Colorado*** Legislature also recently passed SB 19-181, which solidifies local governments' ability to manage oil and gas development and requires the COGCC to prioritize the public over oil and gas development. [[58]](#footnote-59)58However, ***Colorado***'s state and local level fracking regulations lack uniformity. [[59]](#footnote-60)59This lack of uniformity results in duplicative regulations and conflict. [[60]](#footnote-61)60For example, the ***Colorado*** Supreme Court struck down several local government attempts to ban fracking within their jurisdiction. [[61]](#footnote-62)61

To protect the public's health and welfare, ***Colorado*** must take additional steps to ensure fracking does not deplete and pollute available municipal water resources. This Article suggests that ***Colorado***: (1) sanction the public trust doctrine; (2) invigorate the constitutional preferences clause of Article XVI; or (3) declare water as a human right.

THE PUBLIC TRUST DOCTRINE

The public trust doctrine is one approach to recognize and protect water as a public resource. This doctrine is a matter of state law, defined by each state through its constitution or courts. [[62]](#footnote-63)62Under the public trust doctrine, the state acts as the trustee of the state's navigable waters to protect and preserve the waterways for public navigation, commerce, recreation, and other activities for public use. [[63]](#footnote-64)63[*Section 5, Article XVI of* ***Colorado****'s Constitution*](https://advance.lexis.com/api/document?collection=statutes-legislation&id=urn:contentItem:61VF-9YF1-DYDC-J030-00000-00&context=1516831) states: The water of every natural stream, not heretofore appropriated, within the state of ***Colorado***, is hereby declared to be the property of the public, and the same is *dedicated to the use of the people of the state*, subject to appropriation as hereinafter provided. [[64]](#footnote-65)64

However, the Supreme Court in ***Colorado*** has declined to acknowledge the public trust doctrine. [[65]](#footnote-66)65Relying primarily on *Hartman v. Tresise*, a 1906 ***Colorado*** Supreme Court case, the court in *People v. Emmert* declined to recognize a public right to access water. [[66]](#footnote-67)66In *Emmert,* the court reasoned that *Hartman* stood for the proposition that [*Section 5, Article XVI of* ***Colorado****'s Constitution*](https://advance.lexis.com/api/document?collection=statutes-legislation&id=urn:contentItem:61VF-9YF1-DYDC-J030-00000-00&context=1516831) did not ensure public access to water and rather, preserved the historical appropriation system of water rights tied to ***Colorado***'s irrigation economy. [[67]](#footnote-68)67Notably, one dissenting opinion in *Emmert* found that the majority narrowly interpreted **[\*7]**[*Section 5, Article XVI of the* ***Colorado*** *Constitution.*](https://advance.lexis.com/api/document?collection=statutes-legislation&id=urn:contentItem:61VF-9YF1-DYDC-J030-00000-00&context=1516831) [[68]](#footnote-69)68The dissent construed the Constitution as establishing prior appropriation as a superior use to other beneficial uses but not as restricting other uses. [[69]](#footnote-70)69The dissent also argued Section 5, Article XVI stands for the proposition that "until the waters are appropriated and diverted from the stream, they belong to the public." [[70]](#footnote-71)70

The majority of *Emmert* held that, "Constitutional provisions historically concerned with appropriation ... should not be applied to subvert a riparian bed owner's common law right to the exclusive surface use of waters bounded by his lands." [[71]](#footnote-72)71Accordingly, the majority applied the common law rule of property that an owner of land has exclusive right to everything above it. [[72]](#footnote-73)72Thus, the court determined that ownership "of the bed of a non-navigable stream vests in the owner the exclusive right of control of everything above the stream bed, subject only to constitutional and statutory limitations, restrictions and regulations." [[73]](#footnote-74)73In contrast, one dissenting opinion asserted the 1906 ***Colorado*** Supreme Court case, at its core, was a determination on the right to use streams via trespass to land. [[74]](#footnote-75)74Thus, the dissent argues the statements regarding the right to use the stream outside of trespass are only *dicta*, not precedent. [[75]](#footnote-76)75

Recently, the District Court of ***Colorado*** determined that a citizen lacked standing to assert the public trust doctrine. [[76]](#footnote-77)76In *Hill v. Warsewa*, the plaintiff argued that the State of ***Colorado*** should take title of its riverbeds to hold them in public trust for the citizens of the state. [[77]](#footnote-78)77In response, the State of ***Colorado*** contended that recognizing the plaintiff's argument would require the state to take portions of the ***river*** from private owners, which would raise "a host of serious legal concerns for the State - not the least of which is whether the State [would owe] compensation for the taking of land ... along a 280-mile stretch of ***river***." [[78]](#footnote-79)78The court determined that the plaintiff was asserting a right to fish in the ***river*** based on the argument that every citizen had a right to access the ***river***. [[79]](#footnote-80)79Therefore, the court held that the plaintiff lacked standing because the plaintiff alleged a generalized harm and could not force the State of ***Colorado*** to act upon the alleged rights. [[80]](#footnote-81)80

In contrast to ***Colorado***, California's courts have recognized and even expanded upon the public trust doctrine. [[81]](#footnote-82)81In *Marks v. Whitney*, the California Supreme Court determined that the public trust doctrine applies to both navigable **[\*8]**and non-navigable water and protects environmental and ecological considerations. [[82]](#footnote-83)82Thus, if a diversion may cause harm to the environmental and ecological value of a body of water, the public trust doctrine may be able to stop the diversion. [[83]](#footnote-84)83In reaching this decision, the California Supreme Court emphasized flexibility to adapt to changing public uses and needs. [[84]](#footnote-85)84Later, in *National Audubon Society v. Superior Court*, the court addressed the "clash" between its appropriative rights system and its public trust doctrine. [[85]](#footnote-86)85The dispute revolved around Mono Lake, which supported a large population of brine shrimp and migratory birds but was experiencing a drop in levels due to Los Angeles diverting its water since 1970. [[86]](#footnote-87)86The California Supreme Court recognized that appropriation may cause harm to public trust values but such harm is unavoidable to use water as efficiently as possible. [[87]](#footnote-88)87However, the court held "the state must bear in mind its duty as trustee to consider the effect of the taking on the public trust, and to preserve, so far as consistent with the public interest, the uses protected by the trust." [[88]](#footnote-89)88Even after the state approves an appropriation, the trust requires ongoing supervision to monitor the effects on the public trust. [[89]](#footnote-90)89Thus, the court recognized the right of prior appropriators while preserving the trust. [[90]](#footnote-91)90

Utah has also reconciled its prior appropriation system with the public trust doctrine. [[91]](#footnote-92)91In applying its public trust doctrine, the Utah Supreme Court explained the public owns the state's water and has an easement over the water regardless of the owner of the bed beneath so long as the public can lawfully access the water. [[92]](#footnote-93)92Utah's public trust does not stem directly from its Constitution although Section 1, Article XVII states "all existing rights to the use of any of the waters in the State for any useful or beneficial purpose, are hereby recognized and confirmed." [[93]](#footnote-94)93The Utah Supreme Court held that water is a scarce but essential resource and "the State must therefore assume the responsibility of allocating the use of water for the benefit and welfare of the people of the State as a whole." [[94]](#footnote-95)94The public trust is also statutorily codified, in particular, in [*Utah Code Section 73-1-1*](https://advance.lexis.com/api/document?collection=statutes-legislation&id=urn:contentItem:5BKJ-YP21-6VSV-050J-00000-00&context=1516831) declaring that "all waters in this state, whether above **[\*9]**or under the ground are hereby declared to be the property of the public, subject to all existing rights to the use thereof." [[95]](#footnote-96)95Like California, Utah recognizes that the public trust doctrine provides ecological and non-navigable water protections. [[96]](#footnote-97)96

With the future challenges ***Colorado*** will face, it may be time for the ***Colorado*** Supreme Court to reconsider its interpretation of Section 5, Article XVI. [[97]](#footnote-98)97Like California and Utah, ***Colorado*** could interpret the public trust doctrine to protect both navigable and non-navigable water resources from diversions that harm the water's environmental and ecological value. [[98]](#footnote-99)98In applying the public trust doctrine, California has stressed flexibility and adaptability in response to changing circumstances and public needs. [[99]](#footnote-100)99As one commentator suggests, ***Colorado*** could view and implement the public trust doctrine as an evolving and fluctuating state common law. [[100]](#footnote-101)100Like other western states, ***Colorado*** recognizes the scarcity of water and the importance of regulating it. [[101]](#footnote-102)101That recognition aligns ***Colorado*** with states like Utah that employ the public trust doctrine to regulate water for the benefit of the public. [[102]](#footnote-103)102

Adopting the public trust doctrine in ***Colorado*** would enable local governments to adapt their water policies to public needs and protect municipal water supplies from fracking's consumptive use and pollution. California and Utah exhibit varied approaches to implementing public trust doctrines. These states' models offer ***Colorado*** several potential approaches. For example, ***Colorado*** could declare that the public has a senior right to water resources but allow existing rights to continue unless a diversion would unduly harm public interests. Alternatively, the state could require the State Engineer to weigh diversions of any state water against the harm to the public benefit.

It is vitally important to revisit and explore this option because it would provide the broadest protection to water resources and ensure adequate municipal supplies for the future. Due to the ***Colorado*** Supreme Court's reluctance to recognize the doctrine, and the legislature's failure to amend the ***Colorado*** Constitution, an argument based on the public trust doctrine would likely fail in court. [[103]](#footnote-104)103However, since the ***Colorado*** Constitution does state that water is a public property, citizens could use ballot measures to change the constitution to explicitly recognize the public's ownership of state waters. [[104]](#footnote-105)104Although a ballot initiative on public trust has not yet passed, such an initiative remains a viable avenue for citizens to pursue. [[105]](#footnote-106)105

**[\*10]**

WATER USE PREFERENCE

***Colorado***'s legislature could protect the state's water as a public resource by redefining and strengthening the constitutional clause detailing preference of water uses via the concept of optimum use. A domestic preference prioritizes water for domestic uses over other diversions in times of a shortage. [[106]](#footnote-107)106Therefore, a domestic preference could prevent fracking operators from leasing municipal water for other uses. ***Colorado***'s Constitution specifically states: When the waters of any natural stream are not sufficient for the service of all those desiring the use of the same, those using the water for *domestic purposes* *shall have the preference* over those claiming for any other purpose. [[107]](#footnote-108)107

However, ***Colorado*** courts have not interpreted the ***Colorado*** Constitution as providing a preference to domestic use. [[108]](#footnote-109)108Instead, the courts have consistently held that it is unacceptable to divert water that a water rights holder has already appropriated even if the diversion is for domestic purposes. [[109]](#footnote-110)109In *Montrose Canal* ***Co****.*, the ***Colorado*** Supreme Court acknowledged that Section 6, Article XVI recognizes a preference for domestic uses over other uses but stated, "it is not intended thereby to authorize a diversion of water for domestic use from the public streams of the state by means of large canals ... ." [[110]](#footnote-111)110Furthermore, the court likened the domestic preference to that of a riparian owner, [[111]](#footnote-112)111meaning that water rights holders cannot divert such water as they could under prior appropriation. The court's reasoning effectively eliminated the force of the state constitution's domestic preference.

In *Sterling*, the ***Colorado*** Supreme Court again declined to give the domestic preference legal effect, reasoning that:

the right of a city to divert water for the use of its inhabitants is not superior to the right of an individual or a farming community to divert water for domestic or other purposes, in the sense that the city may take water for that purpose from those who have previously appropriated it for the same, or some other beneficial use, without compensating the senior appropriators. [[112]](#footnote-113)112

To employ an effective municipal or domestic preference, ***Colorado*** could use the concept of optimum use. Optimum use originates from "maximum use" of water, i.e. the understanding that a right to water does not entitle one to waste it. [[113]](#footnote-114)113In *Fellhauer*, the ***Colorado*** Supreme Court noted that "along with *vested rights*, there shall be *maximum utilization* of the water of this state." [[114]](#footnote-115)114The Water Rights Determination and Administration Act of 1969 codified the **[\*11]**concept, stating that "it is the policy of this state to integrate the appropriation, use, and administration of underground water tributary to a stream with the use of surface water in such a way as to maximize the beneficial use of all of the waters of this state." [[115]](#footnote-116)115In 1983, the ***Colorado*** Supreme Court equated "maximum use" with "optimum use." [[116]](#footnote-117)116The court also stated that optimum use requires a comprehensive analysis of all significant factors, including environmental and economic considerations. [[117]](#footnote-118)117Notably, the ***Colorado*** Supreme Court also recognized that the optimum use of water does not require using every drop of water. [[118]](#footnote-119)118Through optimum use, ***Colorado*** could designate domestic use as a priority that maximizes the beneficial use of water.

To implement a domestic use preference, ***Colorado*** could model its scheme on Utah's code, which allows the state engineer to approve or deny applications to appropriate if an application would be detrimental to public welfare. [[119]](#footnote-120)119Utah has interpreted "detrimental" to mean anything that is not in the best interest of the public. [[120]](#footnote-121)120The broad definition of detriment affords the state engineer flexibility to adapt to changing circumstances. Thus, ***Colorado*** would not have to employ a domestic preference to water applications automatically, preserving vested rights while still allowing for a way to protect municipal water supply. However, because water users can call for their water based on priority, the legislature would have to adopt a system under which the state engineer prioritizes domestic use during times of water shortage. [[121]](#footnote-122)121As discussed above, junior appropriators must allow senior appropriators to fulfill their water rights first. [[122]](#footnote-123)122Furthermore, since municipalities are at the greatest risk from fracking, ***Colorado*** would need to explicitly list a municipal, or a municipal-domestic, preference to forestall ambiguity. ***Colorado*** already requires the state engineer to consider sustainability in propagating water rules. [[123]](#footnote-124)123Enacting a preference for municipal domestic use would allow future planning for sustainable practices and limit the amount of water that a municipality can lease to fracking operations.

As discussed above, the ***Colorado*** Constitution declares water a public property, dedicated to the use of the people. [[124]](#footnote-125)124Yet, ***Colorado***'s courts have neglected to enforce water use preferences. [[125]](#footnote-126)125To better align ***Colorado***'s system of water rights administration with the state constitution, ***Colorado*** should adopt a domestic water use preference. Preference should only apply in times of **[\*12]**shortage and should not invalidate prior appropriation rights indefinitely. To protect existing rights, ***Colorado*** would also need to decide reasonable limiting factors on preference. Setting preferences would settle future uncertainties while ensuring water availability for ***Colorado***'s growing population. Like the public trust doctrine though, this option faces obstacles. Nonetheless, ***Colorado*** should explore this option considering the increased use of fracking and the changing environment.

A HUMAN RIGHT TO WATER

Lastly, ***Colorado*** might consider following California's lead and declare water a human right. In 2012, Governor Brown signed AB 685 into law. [[126]](#footnote-127)126Referred to as the Human Right to Water Bill, AB 685 took effect 2013 in California's Water Code and states: It is hereby declared to be the established policy of the state that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. [[127]](#footnote-128)127

The Human Right to Water Bill established an ongoing duty for agencies in California to coordinate and consider the impact of activities on domestic water when revising, adopting, or establishing policies, grants, and regulations. [[128]](#footnote-129)128Since passing the Human Right to Water Bill, California has passed a series of other bills and released state plans to address its commitment to safe drinking water. [[129]](#footnote-130)129In particular, Governor Brown signed the Sustainable Groundwater Management Act ("SGMA") into law in 2014. [[130]](#footnote-131)130SGMA mandates sustainable management of groundwater and calls for greater local groundwater agency management through groundwater sustainability plans. [[131]](#footnote-132)131In 2014, the State Water Resources Control Board ("State Water Board") took over regulation of the State's Drinking Water Program in order to streamline management "from source to tap." [[132]](#footnote-133)132In 2015, under [*California Water Code § 189*](https://advance.lexis.com/api/document?collection=statutes-legislation&id=urn:contentItem:5J6S-6TX1-66B9-849T-00000-00&context=1516831), California established the Office of Sustainable Water Solutions to "promote permanent and sustainable drinking water and wastewater treatment solutions to ensure the effective and efficient provision of safe, clean, affordable, and reliable drinking water and wastewater treatment services." [[133]](#footnote-134)133[*California's Water Code § 189*](https://advance.lexis.com/api/document?collection=statutes-legislation&id=urn:contentItem:5J6S-6TX1-66B9-849T-00000-00&context=1516831) authorizes the office, among other activities, to coordinate and provide assistance to various water systems as well as to promote and facilitate regional projects. [[134]](#footnote-135)134 **[\*13]**In 2016, the State Water Board adopted "the human right to water as a core value" and recognized the right to water as a top priority. [[135]](#footnote-136)135

Within California, several agencies are responsible for regulating public water systems. [[136]](#footnote-137)136The State Water Board is primarily responsible for public water systems but the Department of Water Resources, the Office of Environmental Health Hazard Assessment, the Secretary of State, and the Department of Real Estate, also regulate public water systems. [[137]](#footnote-138)137Furthermore, several divisions within the State Water Board handle various issues. [[138]](#footnote-139)138The State Water Board has stated that, "meeting the safe drinking water needs of all Californians will require a multi-agency effort at the state and local level." [[139]](#footnote-140)139Defined regulatory authority has led to better coordination and collaboration between state and local agencies, which is essential to improve and protect water quality. [[140]](#footnote-141)140

California faces water shortage crises like ***Colorado***, but California has been working since 2013 to ensure that it can provide affordable, safe, reliable water to its citizens. California's clean water laws focus on the issue of polluted groundwater, but the legislation could serve as an important model for ***Colorado***. For example, ***Colorado*** could enact legislation recognizing a human right to water to facilitate the enactment of future laws to implement this policy. Like California, ***Colorado*** could first create an ongoing duty by relevant agencies to consider the impacts on domestic water supplies. This would theoretically require the COGCC to consider the impacts fracking would have on domestic water supplies. As discussed above, the ***Colorado*** legislature already requires the COGCC to balance development with public safety and welfare. A human right to water bill could ensure that the COGCC would have to consider impacts on water as they affect public welfare. Acknowledging a human right to water in ***Colorado*** could also be a mechanism by which to establish an effective domestic water preference without amending the ***Colorado*** Constitution. Thus, declaring water a human right could open the door to allow ***Colorado*** to successfully protect its water for the public.

**Conclusion**

At its heart, ***Colorado***'s prior appropriation doctrine is meant to serve the public by directing the maximum and, thus, optimum use of water. Optimum use encourages conservation and discourages removing water from streams frivolously. Moreover, the prior appropriation doctrine mandates that water rights holders put water to beneficial use. However, neither ***Colorado***'s optimum use doctrine nor the prior appropriation doctrine negate the protection of the quantity and quality of water resources. Contrary to ***Colorado***'s current stance, recognizing water as a public resource aligns with the prior appropriation doctrine as well as the ***Colorado*** Constitution and would provide broad, extensive protection to its water resources.

**[\*14]**Consequently, ***Colorado*** should recognize the public trust doctrine. As discussed above, the various approaches that other states use to recognize water as a public resource each face potential complications in ***Colorado***. Yet, ***Colorado*** must recognize that water shortages will not improve or stabilize without change. To protect ***Colorado***'s water resources from fracking and ensure future water availability for municipalities, ***Colorado*** should acknowledge that water is a public resource and establish necessary policies to protect water as a public resource. The best option in ***Colorado*** to enact and recognize water as a public resource is to establish a domestic water use preference system. Notably, a domestic preference would empower ***Colorado*** to limit the amount of water that municipalities could lease to fracking operations. This type of scheme aligns well with the state constitution and ***Colorado*** can adapt it to fit changing needs.

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**End of Document**

1. 1 DAVID H. GETCHES, SANDRA B. ZELLMER & ADELL L. AMOS, WATER LAW IN A NUTSHELL 2 (5th ed. 2015). [↑](#footnote-ref-2)
2. 2 *Id.* at 15. [↑](#footnote-ref-3)
3. 3 *See id.* at 4. [↑](#footnote-ref-4)
4. 4 *Id.* at 6. [↑](#footnote-ref-5)
5. 5 *Id.* at 188. [↑](#footnote-ref-6)
6. 6 *See* WALLACE STEGNER, BEYOND THE HUNDREDTH MERIDIAN: JOHN WESLEY POWELL AND THE SECOND OPENING OF THE WEST 220-22 (1954). [↑](#footnote-ref-7)
7. 7 GETCHES ET AL., *supra* note 1, at 78. [↑](#footnote-ref-8)
8. 8 NEIL GRIGG, ***COLO.*** FOUND. FOR WATER EDUC., CITIZEN'S GUIDE TO WHERE YOUR WATER COMES FROM 23 (Karla A. Brown ed., 2005). [↑](#footnote-ref-9)
9. 9 CAITLIN COLEMAN & NELSON HARVEY, ***COLO.*** FOUND. FOR WATER EDUC., CITIZEN'S GUIDE TO WHERE YOUR WATER COMES FROM 12 (2d ed. 2019). [↑](#footnote-ref-10)
10. 10 GETCHES ET AL., *supra* note 1, at 71-72. [↑](#footnote-ref-11)
11. 11 GETCHES ET AL., *supra* note 1, at 71. [↑](#footnote-ref-12)
12. 12 *See* Ella L. Walker, Aspen M. Anderson, Laura K. Read & Terri S. Hogue, *Water Use for Hydraulic Fracturing of Oil and Gas in the South Platte* ***River*** *Basin,* ***Colorado***, 53 J. AM. WATER RES. ASS'N 839, 841 (2017) (citing Jack Healy, *For Farms in the West, Oil Wells Are Thirsty Rivals*, N.Y. TIMES (Sept. 5, 2012), [*https://www.nytimes.com/2012/09/06/us/struggle-for-water-in-****colorado****-with-rise-in-fracking.html*](https://www.nytimes.com/2012/09/06/us/struggle-for-water-in-colorado-with-rise-in-fracking.html)). [↑](#footnote-ref-13)
13. 13 INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2014 IMPACTS, ADAPTATION, AND VULNERABILITY PART B: REGIONAL ASPECTS 1456 (Vicente R. Barros et al. eds., 2014); NAT'L RSCH. COUNCIL, CLIMATE CHANGE SCIENCE: AN ANALYSIS ON SOME KEY QUESTIONS 1, 3-4, 19 (Nat'l Acad. Press, 2001). [↑](#footnote-ref-14)
14. 14 *See* Healy, *supra* note 12; Walker et al., *supra* note 12, at 849. [↑](#footnote-ref-15)
15. 15 ***COLO.*** DIV. WATER RES., ***COLO.*** WATER CONSERVATION BD. & ***COLO.*** OIL AND GAS CONSERVATION COMM'N, WATER SOURCES AND DEMAND FOR HYDRAULIC FRACTURING OF OIL AND GAS WELLS IN ***COLORADO*** FROM 2010 THROUGH 2015 6 [hereinafter JOINT REPORT]. [↑](#footnote-ref-16)
16. 16 *Id.* [↑](#footnote-ref-17)
17. 17 *See* Walker et al., *supra* note 12, at 840, 849. [↑](#footnote-ref-18)
18. 18 *See* Charles W. Schmidt, *Blind Rush? Shale Gas Boom Proceeds Amid Human Health Questions*, 119 ENV'T HEALTH PERSPS. A348, A348 (2011); *see also* Cary Weiner, *Oil and Gas Development in* ***Colorado***, ***COLO.*** STATE UNIV. EXTENSION (2014). [↑](#footnote-ref-19)
19. 19 *See* Walker et al., *supra* note 12, at 841. [↑](#footnote-ref-20)
20. 20 JOINT REPORT, *supra* note 15 at 1. [↑](#footnote-ref-21)
21. 21 EPA, HYDRAULIC FRACTURING FOR OIL AND GAS: IMPACTS FROM THE HYDRAULIC FRACTURING WATER CYCLE ON DRINKING WATER RESOURCES IN THE UNITED STATES EXECUTIVE SUMMARY 33 (2016). [↑](#footnote-ref-22)
22. 22 *Id.* [↑](#footnote-ref-23)
23. 23 *Id.* [↑](#footnote-ref-24)
24. 24 ***COLO.*** OIL AND GAS CONSERVATION COMM'N, 2017 ANNUAL REPORT 15 (2017). [↑](#footnote-ref-25)
25. 25 *See* EPA, *supra* note 21, at 4; *see also* Adam Mayer, *Risk and Benefits in a Fracking Boom: Evidence from* ***Colorado***, 3 EXTRACTIVE INDUS. & SOC'Y 744, 744 (2016). [↑](#footnote-ref-26)
26. 26 EPA, *supra* note 21, at 46. [↑](#footnote-ref-27)
27. 27 Walker et al., *supra* note 12, at 842, 847. [↑](#footnote-ref-28)
28. 28 *See* EPA, CASE STUDY ANALYSIS OF THE IMPACTS OF WATER ACQUISITION FOR HYDRAULIC FRACTURING ON LOCAL WATER AVAILABILITY 12 (2015) [hereinafter CASE STUDY]; Schmidt, *supra* note 18, at A352. [↑](#footnote-ref-29)
29. 29 EPA, *supra* note 21, at 4, 11, 16; Walker et al., *supra* note 12, at 840, 844. [↑](#footnote-ref-30)
30. 30 EPA, *supra* note 21, at 4. [↑](#footnote-ref-31)
31. 31 EPA, *supra* note 21, at 13. [↑](#footnote-ref-32)
32. 32 Walker et al., *supra* note 12, at 839. [↑](#footnote-ref-33)
33. 33 Walker et al., *supra* note 12, at 844. [↑](#footnote-ref-34)
34. 34 Walker et al., *supra* note 12, at 849. [↑](#footnote-ref-35)
35. 35 CASE STUDY, *supra* note 28, at 98. [↑](#footnote-ref-36)
36. 36 *See* CASE STUDY, *supra* note 28, at 98. [↑](#footnote-ref-37)
37. 37 *See* CASE STUDY, *supra* note 28, at 65; *see also* Walker et al., *supra* note 12, at 839, 841. [↑](#footnote-ref-38)
38. 38 Walker et al., *supra* note 12, at 849. [↑](#footnote-ref-39)
39. 39 Walker et al., *supra* note 12, at 840. [↑](#footnote-ref-40)
40. 40 JOINT REPORT, *supra* note 15, at 1. [↑](#footnote-ref-41)
41. 41 EPA *,* *supra* note 21, at 20. [↑](#footnote-ref-42)
42. 42 EPA *,* *supra* note 21, at 20. [↑](#footnote-ref-43)
43. 43 *See* EPA *,* *supra* note 21, at 20. [↑](#footnote-ref-44)
44. 44 *See* Walker et al., *supra* note 12, at 840. [↑](#footnote-ref-45)
45. 45 EPA, *supra* note 21, at 22. [↑](#footnote-ref-46)
46. 46 EPA, *supra* note 21, at 23. [↑](#footnote-ref-47)
47. 47 *See* EPA, *supra* note 21, at 4. [↑](#footnote-ref-48)
48. 48 EPA, *supra* note 21, at 84. [↑](#footnote-ref-49)
49. 49 EPA, *supra* note 21, at 84. [↑](#footnote-ref-50)
50. 50 *See* Jeffrey C. King, Jamie Lavergne Bryan & Meredith Clark, *Factual Causation:* *The Missing Link in Hydraulic Fracture - Groundwater Contamination Litigation*, 22 DUKE ENV'T L. & POL'Y F. 341, 341-42 (2012). [↑](#footnote-ref-51)
51. 51 King et al., *supra* note 50, at 350-51. [↑](#footnote-ref-52)
52. 52 *See* EPA, *supra* note 21, at 4; Graeme E. Batley & Rai S. Kookana, *Environmental Issues Associated with Coal Seam Gas Recovery: Managing the Fracking Boom*, 9 ENV'T CHEM. 425, 426 (2012). [↑](#footnote-ref-53)
53. 53 *See* EPA, *supra* note 21, at 4. [↑](#footnote-ref-54)
54. 54 EPA, *supra* note 21, at 23. [↑](#footnote-ref-55)
55. 55 [***COLO.*** *REV. STAT. § 34-60-101*](https://advance.lexis.com/api/document?collection=statutes-legislation&id=urn:contentItem:61P5-WXJ1-DYDC-J39R-00000-00&context=1516831) (2019). [↑](#footnote-ref-56)
56. 56 § 34-60-106. [↑](#footnote-ref-57)
57. 57 Joel Minor, *Local Government Fracking Regulations: A* ***Colorado*** *Case Study*, 33 STAN. ENV'T L. J. 59, 100 (2014). [↑](#footnote-ref-58)
58. 58 Dale Ratliff, *Senate Bill 19-181:* ***Colorado*** *Enacts First-Of-Its-Kind Oil and Gas Legislation*, AM. BAR ASS'N (Oct. 25, 2019), [*https://www.americanbar.org/groups/environment\_energy*](https://www.americanbar.org/groups/environment_energy) \_resources/publications/trends/2019-2020/november-december-2019/senate-bill/. [↑](#footnote-ref-59)
59. 59 Grace Heusner, Allison Sloto & Joshua Ulan Galperin, [*Defining and Closing the Hydraulic Fracturing Governance Gap, 95 DENV. L. REV. 191, 213-14 (2017)*](https://advance.lexis.com/api/document?collection=analytical-materials&id=urn:contentItem:5RDM-FPV0-00CT-Y0Y8-00000-00&context=1516831). [↑](#footnote-ref-60)
60. 60 *See* KEYSTONE CTR., ***COLORADO*** OIL AND GAS TASK FORCE FINAL REPORT 3 (2015), *available at* [*https://www.keystone.org/wp-content/uploads/2015/08/022715-ColoradoOilandGas*](https://www.keystone.org/wp-content/uploads/2015/08/022715-ColoradoOilandGas) Task ForceFinalReport.pdf. [↑](#footnote-ref-61)
61. 61 *See* [*City of Fort Collins v.* ***Colo.*** *Oil & Gas Ass'n, 369 P. 3d 586, 589 (****Colo.*** *2016)*](https://advance.lexis.com/api/document?collection=cases&id=urn:contentItem:5JNS-N6B1-F04C-30PP-00000-00&context=1516831); [*City of Longmont* ***Colo.*** *v.* ***Colo.*** *Oil & Gas Ass'n, 369 P.3d 573, 577 (****Colo.*** *2016)*](https://advance.lexis.com/api/document?collection=cases&id=urn:contentItem:5JNS-N6B1-F04C-30PN-00000-00&context=1516831). [↑](#footnote-ref-62)
62. 62 *See* [*PPL Mont., LLC v. Montana, 565 U.S. 576, 604 (2012)*](https://advance.lexis.com/api/document?collection=cases&id=urn:contentItem:5519-TV91-F04K-F1DT-00000-00&context=1516831). [↑](#footnote-ref-63)
63. 63 *See* Idaho v. Coeur d'[*Alene Tribe of Idaho, 521 U.S. 261, 286-87 (1997)*](https://advance.lexis.com/api/document?collection=cases&id=urn:contentItem:3S65-HXW0-003B-R16J-00000-00&context=1516831). [↑](#footnote-ref-64)
64. 64 [***COLO.*** *CONST. art. XVI, § 5*](https://advance.lexis.com/api/document?collection=statutes-legislation&id=urn:contentItem:61VF-9YF1-DYDC-J030-00000-00&context=1516831) (emphasis added). [↑](#footnote-ref-65)
65. 65 *See* [*People v. Emmert, 597 P.2d 1025, 1027-29 (****Colo.*** *1979)*](https://advance.lexis.com/api/document?collection=cases&id=urn:contentItem:3RX4-1DW0-003D-926G-00000-00&context=1516831). [↑](#footnote-ref-66)
66. 66 [*Id. at 1027-28*](https://advance.lexis.com/api/document?collection=cases&id=urn:contentItem:3RX4-1DW0-003D-926G-00000-00&context=1516831) (citing [*Hartman v. Tresise, 84 P. 685 (****Colo.*** *1906))*](https://advance.lexis.com/api/document?collection=cases&id=urn:contentItem:3RRR-2430-0040-0540-00000-00&context=1516831). [↑](#footnote-ref-67)
67. 67 [*Emmert, 597 P.2d at 1028*](https://advance.lexis.com/api/document?collection=cases&id=urn:contentItem:3RX4-1DW0-003D-926G-00000-00&context=1516831). [↑](#footnote-ref-68)
68. 68 [*Id. at 1030*](https://advance.lexis.com/api/document?collection=cases&id=urn:contentItem:3RX4-1DW0-003D-926G-00000-00&context=1516831) (Groves, J., dissenting). [↑](#footnote-ref-69)
69. 69 *Id.* [↑](#footnote-ref-70)
70. 70 *Id.* (citing [*Hartman, 84 P. at 690*](https://advance.lexis.com/api/document?collection=cases&id=urn:contentItem:3RRR-2430-0040-0540-00000-00&context=1516831) (Bailey, J., dissenting)). [↑](#footnote-ref-71)
71. 71 [*Emmert, 597 P.2d at 1029*](https://advance.lexis.com/api/document?collection=cases&id=urn:contentItem:3RX4-1DW0-003D-926G-00000-00&context=1516831). [↑](#footnote-ref-72)
72. 72 [*Id. at 1027*](https://advance.lexis.com/api/document?collection=cases&id=urn:contentItem:3RX4-1DW0-003D-926G-00000-00&context=1516831). [↑](#footnote-ref-73)
73. 73 *Id.* [↑](#footnote-ref-74)
74. 74 [*Id. at 1030-31*](https://advance.lexis.com/api/document?collection=cases&id=urn:contentItem:3RX4-1DW0-003D-926G-00000-00&context=1516831) (citing [*Hartman, 84 P. at 690*](https://advance.lexis.com/api/document?collection=cases&id=urn:contentItem:3RRR-2430-0040-0540-00000-00&context=1516831) (Bailey, J., dissenting)). [↑](#footnote-ref-75)
75. 75 [*Id. at 1031*](https://advance.lexis.com/api/document?collection=cases&id=urn:contentItem:3RX4-1DW0-003D-926G-00000-00&context=1516831). [↑](#footnote-ref-76)
76. 76 *See* Hill v. Warsewa, No. 18-CV-01710-[*KMT, 2020 WL 1443594, at 5-6 (D.* ***Colo.*** *Mar. 25, 2020)*](https://advance.lexis.com/api/document?collection=cases&id=urn:contentItem:5YHB-VXD1-JBDT-B307-00000-00&context=1516831). [↑](#footnote-ref-77)
77. 77 *Id.* at 4. [↑](#footnote-ref-78)
78. 78 *Id.* at 10. [↑](#footnote-ref-79)
79. 79 *Id.* at 13. [↑](#footnote-ref-80)
80. 80 *Id*. at 11. [↑](#footnote-ref-81)
81. 81 *See* 62 Cal. Jur. 3d *Water* § 242 (2019); [*Marks v. Whitney, 491 P.2d 374, 380 (Cal. 1971)*](https://advance.lexis.com/api/document?collection=cases&id=urn:contentItem:3RRK-J2N0-003C-H0MN-00000-00&context=1516831). [↑](#footnote-ref-82)
82. 82 *See* [*Marks, 491 P.2d at 379-80*](https://advance.lexis.com/api/document?collection=cases&id=urn:contentItem:3RRK-J2N0-003C-H0MN-00000-00&context=1516831); *see also* Stephen Leonhardt, Esq. & Jessica Spuhler, Esq., *The Public Trust Doctrine: What It Is, Where It Came From, and Why* ***Colorado*** *Does Not (And Should Not) Have One*, [*16 U. DENV. WATER L. REV. 47, 70 (2012)*](https://advance.lexis.com/api/document?collection=analytical-materials&id=urn:contentItem:5801-XMW0-00SW-504M-00000-00&context=1516831). [↑](#footnote-ref-83)
83. 83 *See* Robin Kundis Craig, *A Comparative Guide to the Western States' Public Trust Doctrines: Public Values, Private Rights, and the Evolution Toward an Ecological Public Trust*, [*37 ECOLOGY L.Q. 53, 114 (2010)*](https://advance.lexis.com/api/document?collection=analytical-materials&id=urn:contentItem:4YVR-RT40-00CV-J039-00000-00&context=1516831). [↑](#footnote-ref-84)
84. 84 *See* [*Marks, 491 P.2d at 380*](https://advance.lexis.com/api/document?collection=cases&id=urn:contentItem:3RRK-J2N0-003C-H0MN-00000-00&context=1516831). [↑](#footnote-ref-85)
85. 85 Craig Anthony (Tony) Arnold & Leigh A. Jewel, *Litigation's Bounded Effectiveness and the Real Public Trust Doctrine: The Aftermath of the Mono Lake Case*, 14 HASTINGS W.-N.W. J. ENV'T L. & POL'Y 1177, 1179-81 (2008); *see* [*Nat'l Audubon Soc'y v. Superior Court, 658 P.2d 709, 728 (Cal. 1983)*](https://advance.lexis.com/api/document?collection=cases&id=urn:contentItem:3RX6-F0N0-003D-J1V1-00000-00&context=1516831). [↑](#footnote-ref-86)
86. 86 [*Nat'l Audubon Soc'y, 658 P.2d at 711*](https://advance.lexis.com/api/document?collection=cases&id=urn:contentItem:3RX6-F0N0-003D-J1V1-00000-00&context=1516831). [↑](#footnote-ref-87)
87. 87 [*Id. at 728*](https://advance.lexis.com/api/document?collection=cases&id=urn:contentItem:3RX6-F0N0-003D-J1V1-00000-00&context=1516831). [↑](#footnote-ref-88)
88. 88 *Id.* (internal citation omitted). [↑](#footnote-ref-89)
89. 89 *Id.* [↑](#footnote-ref-90)
90. 90 *See id.* [↑](#footnote-ref-91)
91. 91 *See* [*J.J.N.P.* ***Co****. v. State, 655 P.2d 1133, 1136 (Utah 1982)*](https://advance.lexis.com/api/document?collection=cases&id=urn:contentItem:3RXP-5H00-003G-F33W-00000-00&context=1516831). [↑](#footnote-ref-92)
92. 92 [*Id. at 1137*](https://advance.lexis.com/api/document?collection=cases&id=urn:contentItem:3RXP-5H00-003G-F33W-00000-00&context=1516831). [↑](#footnote-ref-93)
93. 93 Craig, *supra* note 83, at 183; UTAH CONST. art. XVII, § 1. [↑](#footnote-ref-94)
94. 94 [*J.J.N.P., 655 P.2d at 1136*](https://advance.lexis.com/api/document?collection=cases&id=urn:contentItem:3RXP-5H00-003G-F33W-00000-00&context=1516831). [↑](#footnote-ref-95)
95. 95 Craig, *supra* note 83, at 183-84; [*UTAH CODE ANN. § 73-1-1*](https://advance.lexis.com/api/document?collection=statutes-legislation&id=urn:contentItem:5BKJ-YP21-6VSV-050J-00000-00&context=1516831) (West 2020). [↑](#footnote-ref-96)
96. 96 Craig, *supra* note 83, at 187. [↑](#footnote-ref-97)
97. 97 *See* [***COLO.*** *CONST. art. XVI, § 5*](https://advance.lexis.com/api/document?collection=statutes-legislation&id=urn:contentItem:61VF-9YF1-DYDC-J030-00000-00&context=1516831); [*Emmert, 597 P.2d at 1027-29*](https://advance.lexis.com/api/document?collection=cases&id=urn:contentItem:3RX4-1DW0-003D-926G-00000-00&context=1516831); [*Hartman, 84 P. at 685*](https://advance.lexis.com/api/document?collection=cases&id=urn:contentItem:3RRR-2430-0040-0540-00000-00&context=1516831). [↑](#footnote-ref-98)
98. 98 *See* [*Marks v. Whitney, 491 P.2d 374, 379-80 (Cal. 1971)*](https://advance.lexis.com/api/document?collection=cases&id=urn:contentItem:3RRK-J2N0-003C-H0MN-00000-00&context=1516831); *see also* Craig, *supra* note 83, at 187. [↑](#footnote-ref-99)
99. 99 [*Nat'l Audubon Soc'y, 658 P.2d at 728 (Cal. 1983)*](https://advance.lexis.com/api/document?collection=cases&id=urn:contentItem:3RX6-F0N0-003D-J1V1-00000-00&context=1516831). [↑](#footnote-ref-100)
100. 100 Craig, *supra* note 83, at 91. [↑](#footnote-ref-101)
101. 101 *See* STEGNER, *supra* note 6. [↑](#footnote-ref-102)
102. 102 *See* [*J.J.N.P.* ***Co****., 655 P.2d at 1136 (Utah 1982)*](https://advance.lexis.com/api/document?collection=cases&id=urn:contentItem:3RXP-5H00-003G-F33W-00000-00&context=1516831). [↑](#footnote-ref-103)
103. 103 [*Emmert, 597 P.2d at 1028-29 (****Colo.*** *1979)*](https://advance.lexis.com/api/document?collection=cases&id=urn:contentItem:3RX4-1DW0-003D-926G-00000-00&context=1516831). [↑](#footnote-ref-104)
104. 104 [***COLO.*** *CONST. art. XVI, § 5*](https://advance.lexis.com/api/document?collection=statutes-legislation&id=urn:contentItem:61VF-9YF1-DYDC-J030-00000-00&context=1516831); Leonhardt & Spuhler, *supra* note 82, at 81. [↑](#footnote-ref-105)
105. 105 Leonhardt & Spuhler, *supra* note 82, at 81-90. [↑](#footnote-ref-106)
106. 106 Robert Beck, *Use Preferences for Water*, [*76 N.D.L. REV. 753, 770-74 (2000)*](https://advance.lexis.com/api/document?collection=analytical-materials&id=urn:contentItem:4372-XHY0-00CW-30KX-00000-00&context=1516831). [↑](#footnote-ref-107)
107. 107 [***COLO.*** *CONST. art. XVI, § 6*](https://advance.lexis.com/api/document?collection=statutes-legislation&id=urn:contentItem:61VF-9YF1-DYDC-J032-00000-00&context=1516831) (emphasis added). [↑](#footnote-ref-108)
108. 108 Beck, *supra* note 106, at 774. [↑](#footnote-ref-109)
109. 109 *See* [*Town of Sterling v. Pawnee Ditch Extension* ***Co****., 94 P. 339, 340-41 (****Colo.*** *1908)*](https://advance.lexis.com/api/document?collection=cases&id=urn:contentItem:3RRN-11C0-0040-04JD-00000-00&context=1516831); [*Broadmoor Dairy & Live-Stock* ***Co****. v. Brookside Water & Improvement* ***Co****., 52 P.792, 794 (****Colo.*** *1897)*](https://advance.lexis.com/api/document?collection=cases&id=urn:contentItem:3RRR-2C70-0040-0154-00000-00&context=1516831); [*Montrose Canal* ***Co****. v. Loutsenhizer Ditch* ***Co****., 48 P. 532, 534 (****Colo.****1896)*](https://advance.lexis.com/api/document?collection=cases&id=urn:contentItem:3RRR-2DB0-0040-019R-00000-00&context=1516831). [↑](#footnote-ref-110)
110. 110 *See* [*Montrose Canal* ***Co****., 48 P. at 534*](https://advance.lexis.com/api/document?collection=cases&id=urn:contentItem:3RRR-2DB0-0040-019R-00000-00&context=1516831). [↑](#footnote-ref-111)
111. 111 *Id.* [↑](#footnote-ref-112)
112. 112 [*Sterling, 94 P. at 341*](https://advance.lexis.com/api/document?collection=cases&id=urn:contentItem:3RRN-11C0-0040-04JD-00000-00&context=1516831). [↑](#footnote-ref-113)
113. 113 [*Fellhauer v. People, 447 P.2d 986, 994 (****Colo.*** *1968)*](https://advance.lexis.com/api/document?collection=cases&id=urn:contentItem:3RX4-1Y50-003D-90XB-00000-00&context=1516831). [↑](#footnote-ref-114)
114. 114 *Id.* [↑](#footnote-ref-115)
115. 115 [***COLO.*** *REV. STAT. § 37-92-102(1)(a)*](https://advance.lexis.com/api/document?collection=statutes-legislation&id=urn:contentItem:61P5-WY01-DYDC-J3FN-00000-00&context=1516831) (2020). [↑](#footnote-ref-116)
116. 116 *See* [*Alamosa-La Jara Water Users Prot. Ass'n v. Gould, 674 P.2d 914, 935 (****Colo.*** *1983)*](https://advance.lexis.com/api/document?collection=cases&id=urn:contentItem:3RX4-1620-003D-90RY-00000-00&context=1516831). [↑](#footnote-ref-117)
117. 117 *Id.* [↑](#footnote-ref-118)
118. 118 *Id.* [↑](#footnote-ref-119)
119. 119 ***UTAH CODE ANN. § 73-3-8*** (2020). [↑](#footnote-ref-120)
120. 120 *See* [*Tanner v. Bacon, 136 P.2d 957, 964 (Utah 1943)*](https://advance.lexis.com/api/document?collection=cases&id=urn:contentItem:3WJN-64N0-00KR-D3BT-00000-00&context=1516831). [↑](#footnote-ref-121)
121. 121 GREGORY J. HOBBS JR., WATER EDUC. ***COLO.***, CITIZEN'S GUIDE TO ***COLORADO*** WATER LAW 18 (Caitlin Coleman ed., 4th ed. 2015). [↑](#footnote-ref-122)
122. 122 *Id.* [↑](#footnote-ref-123)
123. 123 *See* [***COLO.*** *REV. STAT. § 37-92-501(4)(a)(I)*](https://advance.lexis.com/api/document?collection=statutes-legislation&id=urn:contentItem:61P5-WY01-DYDC-J3GH-00000-00&context=1516831) (2020); *see also* Peter Johnson, *The Third Act in* ***Colorado*** *Water Law: The* ***Colorado*** *Supreme Court Affirms the Concept of Sustainable Optimum Use in Simpson v. Cotton Creek Circle,* *LLC*, [*12 U. DENV. WATER L. REV. 241, 253 (2008)*](https://advance.lexis.com/api/document?collection=analytical-materials&id=urn:contentItem:4WB4-FX10-00SW-50D6-00000-00&context=1516831). [↑](#footnote-ref-124)
124. 124 [***COLO.*** *CONST. art. XVI, § 5*](https://advance.lexis.com/api/document?collection=statutes-legislation&id=urn:contentItem:61VF-9YF1-DYDC-J030-00000-00&context=1516831) (emphasis added). [↑](#footnote-ref-125)
125. 125 *See* [*Town of Sterling, 94 P. at 340-41*](https://advance.lexis.com/api/document?collection=cases&id=urn:contentItem:3RRN-11C0-0040-04JD-00000-00&context=1516831); [*Broadmoor Dairy & Live-Stock* ***Co****., 52 P. at 794*](https://advance.lexis.com/api/document?collection=cases&id=urn:contentItem:3RRR-2C70-0040-0154-00000-00&context=1516831); [*Montrose Canal* ***Co****., 48 P. at 534*](https://advance.lexis.com/api/document?collection=cases&id=urn:contentItem:3RRR-2DB0-0040-019R-00000-00&context=1516831). [↑](#footnote-ref-126)
126. 126 CALIFORNIANS WITHOUT SAFE WATER AND SANITATION: CALIFORNIA WATER PLAN UPDATE 2013, at 27 (2013). [↑](#footnote-ref-127)
127. 127 [*CAL. WATER CODE § 106.3(a)*](https://advance.lexis.com/api/document?collection=statutes-legislation&id=urn:contentItem:5J6S-6TX1-66B9-843G-00000-00&context=1516831) (West 2020). [↑](#footnote-ref-128)
128. 128 [*CAL. WATER CODE § 106.3(b)*](https://advance.lexis.com/api/document?collection=statutes-legislation&id=urn:contentItem:5J6S-6TX1-66B9-843G-00000-00&context=1516831) (West 2020). [↑](#footnote-ref-129)
129. 129 Brett Walton, *Timeline: California Human Right to Water*, CIRCLE OF BLUE (Sept. 13, 2017), [*https://www.circleofblue.org/2017/world/timeline-california-human-right-water/*](https://www.circleofblue.org/2017/world/timeline-california-human-right-water/). [↑](#footnote-ref-130)
130. 130 CAL. DEPT. OF WATER RES., SGMA GROUNDWATER MANAGEMENT, https://water. ca.gov/Programs/Groundwater-Management/SGMA-Groundwater-Management/; [*CAL. WATER CODE § 10720*](https://advance.lexis.com/api/document?collection=statutes-legislation&id=urn:contentItem:5J6S-6VW1-66B9-80JX-00000-00&context=1516831) (West 2020). [↑](#footnote-ref-131)
131. 131 [*CAL. WATER CODE§§10720.1(a)*](https://advance.lexis.com/api/document?collection=statutes-legislation&id=urn:contentItem:5J6S-6VW1-66B9-80K0-00000-00&context=1516831), (d) (West 2020); [*CAL. WATER CODE § 10720.7*](https://advance.lexis.com/api/document?collection=statutes-legislation&id=urn:contentItem:5J6S-6VW1-66B9-80K6-00000-00&context=1516831) (West 2020). [↑](#footnote-ref-132)
132. 132 STATE WATER RES. CONTROL BD., RES. 2016-0010, at 2 (2016) [hereinafter Res. 2016-0010]; STATE WATER RES. CONTROL BD., SAFE DRINKING WATER PLAN FOR CALIFORNIA 20 (2015) [hereinafter Safe Drinking Water Plan]. [↑](#footnote-ref-133)
133. 133 [*CAL. WATER CODE § 189(b)*](https://advance.lexis.com/api/document?collection=statutes-legislation&id=urn:contentItem:5J6S-6TX1-66B9-849T-00000-00&context=1516831) (West 2020). [↑](#footnote-ref-134)
134. 134 *Id.* [↑](#footnote-ref-135)
135. 135 RES. 2016-0010, *supra* note 132, at 5. [↑](#footnote-ref-136)
136. 136 SAFE DRINKING WATER PLAN, *supra* note 132, at 20. [↑](#footnote-ref-137)
137. 137 *Id.* [↑](#footnote-ref-138)
138. 138 *Id.* at 20-21. [↑](#footnote-ref-139)
139. 139 *Id.* at 15. [↑](#footnote-ref-140)
140. 140 *Id.* at 36-37. [↑](#footnote-ref-141)