PRESIDENT’S NOTES
By Allison MacEwan, P.E., CFM, AWRA-WA President

Hopefully everyone is enjoying the arrival of summer! As we pass the mid-year mark for 2016, the AWRA-WA Board’s summer activities are in full swing. We are assembling a great program for our 2016 AWRA-WA State Conference on Rural Domestic and Municipal Water Supply, which will be held on October 26th in Seattle (see the announcement on p.7). We are also planning our remaining summer/fall dinner meetings. Stay tuned for further details - we hope that you are able to join us at these upcoming events.

It is also customary for our Nominations and Elections Committee to begin an outreach process to elicit nominations for the next year’s AWRA-WA Board. It is my goal that the process for nominating and electing our AWRA-WA Board members is clearly understood by our entire membership. With that in mind, here is a brief overview of the nominations and elections process that is anticipated for the coming months of 2016:

- In late summer through early fall, our Nominations Committee will distribute an email to our membership announcing that nominations to the AWRA-WA Board are now being considered. We ask that anyone who is interested in joining the Board to contact the Committee for more information. This announcement will also be published in our next newsletter. Current Board members will also help to identify potential nominees for the slate of Directors.
- Based on the feedback received from this process, the Nominations Committee will compile a listing of potential nominees for the 2017 Board of Directors election slate. This list typically includes a combination of both previous Board members and new individuals, all who have expressed an interest in being considered for nomination.
- At the November AWRA-WA Board meeting, the Board will review the list of nominees and vote to select up to 15 persons to put forth on the 2017 Board of Directors election slate. This slate, along with biographies of the nominees, will be published in our newsletter or distributed via a separate email to our membership. The date and location of the Annual Meeting of Members will also be announced.
- We will be trying out a new elections process for 2016, in an effort to increase participation from our membership throughout the state. Election materials will be distributed electronically via email, starting in mid-November. Ballots will present voters with a Board-proposed slate of nominees, and also provide the option for write-in candidates, as an alternative to the slate.
- Our Annual Meeting of Members will be held in December 2016, and election results will be announced at the meeting. The new 2017 AWRA-WA Board then begins service!

If anyone has questions or comments related to the nominations and elections process described above, I would welcome the opportunity to discuss further. Please feel free to contact me at any time. I can be reached via email at: amacewan@gmail.com.
AWRA - UNIVERSITY OF WASHINGTON
2016 SPRING NETWORKING EVENT
By Amelia Oates, AWRA-WA Student Member

The spring 2016 networking event with the AWRA University of Washington (UW) Student Chapter and AWRA Washington Chapter was a great success. There were approximately 10 professionals in attendance and about 25 UW students.

The first half of the evening consisted of a panel where the water resource professionals, ranging from public and private sector to UW faculty, gave descriptions of their experience and answered student questions. Following this panel, students had an opportunity to speak one-on-one with the professionals in a “speed networking” rotation for the remainder of the event.

The spring networking event garnered positive feedback from both students and professionals. Participating students gained helpful advice about careers in water resource management and the professionals enjoyed sharing their experiences. The light refreshments and snacks were a great fit for the beautiful Vista Café overlooking Portage Bay.

We hope this event will continue to introduce AWRA-UW members and AWRA-WA chapter professionals in the future. This event is also a way to increase student interest in the chapter and increase our membership.

June AWRA-WA Dinner Review: Water Resources Legislative Update for 2016
By Terry Smith, AWRA-WA Board Member

Dave Christensen was the featured speaker at the June 12, 2016 AWRA-WA dinner meeting and annual legislative update. This event was held at the Naked City Brewery in Seattle, was co-hosted by Washington Hydrological Society.

Dave is Program Development Section Manager for Washington Department of Ecology Water Resources Program. He gave a brief overview of the legislative session and process for 2016. There were only 12 proposed bills tracked by the Water Resources group. Several of these were bills that had been introduced in 2015. Dave explained that bills introduced in odd number years could be re-introduced and retained in the following year, even if the bill failed in its initial year.

Some of the bills introduced in 2015 and 2016 were proposed in reaction to a myriad of court cases responding to the issuance of water use permits. Dave summarized how these cases have impacted and will continue to impact water use permit decisions by Ecology. Several recent court cases have dealt with the issue of whether water use permits could be issued if the additional water use would reduce instream flows. Instream flows have been determined to impact fish habitat. That, in part, restricts water use that would result in reduction of streams and rivers below these levels. Ecology has applied the use of mitigation and exceptions to the instream flow rule through Overriding Concerns of Public Interest (OCPI) to approve permits that would allow water use that would result in reduction of instream flows. The courts, in a series of decisions, found that the mitigation did not replace the instream flows and that OCPI was not intended to be used for long-term exceptions, but instead only for temporary emergencies. The application of the instream flow rule (ISF) has resulted in a moratorium on new unmitigated uses of water in the Skagit Valley. (For a good in-depth analysis of these cases as well as a history of the establishment and interpretation of ISF and OCPI, see “Hirst v. Whatcom County: A Report from the Confluence of Water Rights, Rural Water Supply, and Growth Management” in the March/April 2016 issue of the AWRA-WA newsletter and “Foster v. Ecology: Back to the Basics of Western Water Law” in this issue, both on the AWRA-WA website.)

Bills that passed this last session are:

**HB 1130** – Water power license fees. This bill was initially introduced in 2015. It extends the fees paid by hydro power operators. These fees cover staffing for relicensing and implementation of adaptive management. It also provides new reporting requirements on how Ecology spends money collected from the fees.

**SB 6179** – Water banking transparency. This bill is intended to increase the appearance of fairness in water banking. Information is to be provided regarding, cost, water right priority date, how much is available, where it is available, the approval process and nature of ownership. The issue of leased water was not resolved with this bill.

**HB 6513** – Reservations of water. To insure that adopted

**Continued on Page 9: Legislature**

[Image 36x36 to 301x250]
**Foster v. Ecology: Back to the Basics of Western Water Law**

By Joe Mentor, Jr., Mentor Law Group

**Introduction**

In a landmark decision, the Washington Supreme Court returned to the basics of water water law, ruling that “first in time” means exactly that. In *Foster v. Washington Department of Ecology*, decided in October 2015, the Supreme Court rejected a Department of Ecology decision granting a new water right permit to the City of Yelm that was based on the department’s finding that “overriding considerations of the public interest” (OCPI) justified granting the permit. Ecology issued the permit notwithstanding the fact that the City’s proposed water withdrawal would deplete stream flows, relying in part on out-of-kind mitigation to offset environmental impacts caused by the new withdrawal.

This article provides an analysis of the *Foster* decision. The article reviews Washington case law that led to the decision, and discusses its implications for future permit decisions. The underlying purpose for time-based priorities is to protect senior water rights from impairment by later -- and therefore junior -- water users. The author concludes that the decision will have long-term consequences for prospective water right permit applicants, closing the door to those who try to circumvent the water code’s no-impairment standard.

**Background**

Washington water law, like that of all western states, is based on the doctrine of prior appropriation. Provisions of the State’s 1917 water code -- still in effect today -- establish the fundamental rule that a water right in Washington state may only be acquired “only by appropriation for a beneficial use and in the manner provided and not otherwise.” Significantly, the state water code also codifies the rule that the first appropriator of water is the first in right. The Groundwater Code of 1945 extends the application of the 1917 water code to the appropriation and beneficial use of groundwater. The Groundwater Code declares that the right of an appropriator of surface water rights “shall be superior to any subsequent right hereby authorized to be acquired in or to groundwater.”

The Water Code of 1917 established a permit system as the exclusive method to appropriate surface water. Any person or entity seeking to appropriate water for a beneficial use that is not otherwise exempt from permitting must apply to Ecology for a permit and may not use public waters until he or she has received a permit to do so. The Groundwater Code of 1945 extended the 1917 Code’s water right permit system to groundwater. The 1945 exempts groundwater withdrawals from permitting if the water use is limited to a withdrawal of 5,000 gallons per day or less for an industrial purpose, for single or group domestic use, or for irrigation of less than one half acre of lawn or noncommercial garden.

Before issuing a water right permit, RCW 90.03.290 requires Ecology to make essentially four determinations. Ecology must affirmatively find (1) that water is available for appropriation; (2) for a beneficial use; and that (3) an appropriation must not impair existing rights; or (4) be detrimental to the public welfare.

In 1969, the Washington legislature added Chapter 90.22 to the state water code to protect stream flows in Washington’s surface waters. RCW 90.22.010 authorizes the Department of Ecology to establish regulations to protect instream flows. RCW 90.22.030 prohibits Ecology from granting a water right permit that conflicts with an instream flow regulation. The Water Resources Act of 1971 expanded on Ecology’s authority to protect instream flows. Specifically, the Act directed Ecology to retain base flows as necessary “to provide for preservation of wildlife, fish, scenic, aesthetic and other environmental values.” The 1971 Act gave Ecology the authority to “withdraw various waters of the state from additional appropriations until such data and information are available.”

In addition, the Act authorized Ecology to close streams to further appropriation. In 1979, the Legislature declared that instream flows “constitute appropriations within the meaning of the [state water code] with priority dates as of the effective dates of their establishment.” Once established by rule, a minimum flow constitutes an existing right that may not be impaired by subsequent surface water diversions or ground-
The Washington courts have consistently protected the rights of subsequent claimants. In 1889, in *Tenem Ditch Co. v. Thorpe*, the Court found that the right of prior appropriation, established by local custom, "exists as the law of the land." In *Ellis v. Pomeroy Improvement Co.*, the Court held that a person or entity acquired a vested water right by exercising an actual appropriation. The *Ellis* Court ruled that the right of a prior appropriator is superior to that of a riparian owner "on the principle alone of prior appropriation ...." In *Geddis v. Parrish*, the Territorial Supreme Court held that the rights of one who acquires title to land from the public domain takes title subject to the rights of a prior appropriator.

In 1901, in *Longmire v. Smith*, the Court clarified the rules of priority as between appropriators. The *Longmire* Court held that a water right becomes vested when a valid appropriation is made. Consequently, the Court ruled that a water right priority is determined by the date of the appropriation. The Court held that a water right claim based on prior appropriation and beneficial use of water "is superior to all other claims, whether founded upon appropriation or riparian ownership," thus, reversing a lower court decree apportioning available water between competing claimants. The *Longmire* Court held that "it is an elementary principle of the law of appropriation ... that the first appropriator is entitled to the quantity of water appropriated by him, to the exclusion of subsequent claimants."

The Washington courts have consistently protected the rights of senior appropriators since the Supreme Court's *Longmire* decision. For example, in 1917, in *Pleasant Valley Irr. & Power Co. v. Okanogan Power & Irr. Co.*, the Washington Supreme Court confirmed the prior rights of a senior appropriator, ordering a lower court to quiet the senior appropriator's title and to enjoin the junior appropriator from interfering with the senior's water right. In 1932, in *State ex rel. Roseburg v. Mohar*, the Supreme Court affirmed the right of a senior appropriation to injunctive relief against an out-of-priority water user. The Court's *Mohar* decision was the last word on the subject until 1991, when the Supreme Court in *Neubert v. Yakima-Tieton Irrigation District* invalidated an irrigation district policy that allocated water in a manner inconsistent with the water right priorities of appropriative water rights. The *Neubert* Court held that an appropriative water right under water law operates to the exclusion of subsequent claimants. The Court ruled that time-based priority was "an elementary principle of the law of appropriation of water," and that the principle of prior appropriation "has been codified by RCW 90.03.010, which provides that, '[a]s between appropriations, the first in time shall be the first in right.'"

In 2000, the State Supreme Court for the first time extended the principles of prior appropriation to protect instream flow water rights. In *Postema v. Pollution Control Hearings Board*, the Washington Supreme Court upheld Ecology's decisions rejecting over 300 groundwater permit applications across the state. To reach this result, the *Postema* Court first held that the water code protects senior surface water rights from impairment caused by groundwater pumping, and that a minimum flow constitutes an appropriation of water. The Court found that instream flow water rights were entitled to the same protection from impairment as other senior water rights. Consequently, the Court ruled that a minimum flow set by rule is an existing right that may not be impaired by subsequent groundwater withdrawals.

The *Postema* Court next considered the proper standard to determine impairment. The Court rejected the PCHB's ruling that hydraulic continuity equates to impairment as a matter of law. Instead, the Court determined that impairment was a factual question, and that existing rights may or may not be impaired where there is hydraulic continuity depending upon the nature of the appropriation, and the source aquifer, and their relationship to each other. Nevertheless, the Court rejected the appellants' arguments that Ecology must show direct and measurable impact on surface water to establish

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13 Postema, 142 Wn.2d at 81.
14 See AGO 2009 No. 6, p. 12. RCW 90.54.050 applies to permit-exempt withdrawals as well as permitted withdrawals because “exempt withdrawals are only exempted from the requirements of obtaining a permit; they are not made exempt from other laws governing groundwater rights.” AGO 2009 No. 6, p. 13.
15 RCW 90.54.020.
16 *Tenem Ditch Co. v. Thorpe*, 1 Wn. 566, 20 P. 588 (1889).
17 *Tenem Ditch Co.*, 1 Wn. at 569.
18 *Ellis v. Pomeroy Improvement Co.*, 1 Wn. 572, 21 P. 27 (1889).
19 *Ellis*, 1 Wn. at 578.
21 Id.
23 Id.
24 Id., at 448.
25 Id., at 446.
26 Id., at 447.
31 *Postema v. Pollution Control Hearings Board*, 142 Wn. 2d 68, 11 P. 3d 726 (2000).
32 *Postema*, 142 Wn. 2d at 81.
33 Id., at 82.
34 Id., at 81.
MAY DINNER MEETING REVIEW: 2016 DARCY LECTURE

By Jason McCormick, McCormick Water Strategies and AWRA-WA Secretary

AWRA-WA’s May dinner meeting, in Seattle, featured a talk from Dr. Ty Ferré, University of Arizona (UA) Professor and designated 2016 Darcy Lecturer (Darcy). The Darcy Lecture series is sponsored by the National Ground Water Association (NGWA) and was established in 1986, in honor of Henry Darcy for his 1856 investigations that led to Darcy’s Law. The lecture series features rotating researchers who travel around the globe sharing their research with professional groups and universities.

Dr. Ferré’s talk titled, “Seeing Things Differently: Rethinking the Relationship between Data, Models, and Decision Making,” focuses on applying an approach to modeling groundwater (and other scientific data) based on utilization of an “ensemble of models” to provide a robust decision support tool in cases of conflicting predictions. Dr. Ferré argues that it is easier to dismiss result(s) of a single model than it is to dismiss the result(s) of a model ensemble that has been chosen to test the results of multiple models. He suggests that the key to successful model selection is to consider discriminatory data and focus on a model ensemble that is representative across predictions, with a result that is robust and legally defensible.

First, one must acknowledge that biased data seeking to disprove outcomes can easily be selected and fed into a single model in instances of conflicting predictions of environmental response. In so doing, applied science in this realm can actually back your results into a corner and potentially produce a less legally defensible result through focusing on what it is not. Dr. Ferré proposes focusing on the opposite approach based on selecting models and collecting data specifically to test conflicting predictions between one another.

His methodology for this approach is based on Discrimination-Inference to Reduce Expected Cost Technique (DIRECT). He presents the premise that “[r]obust decision making requires the use of an ensemble of models, conditioned on discriminatory data, that consider users’ stated utilities”. Through this approach he suggests that scientific inquiries should seek to model all possible outcomes which are then compartmentalized independently and tested.

Two major lessons from the talk include:
1. Don’t fall in love with your model.
2. Be open to dissenting opinions and establish conditions that allow you to change your mind.

For more information and/or for a copy of the talk go to:

 https://darcylecture2016.wordpress.com
Page 4: Foster

improvement. Instead, the Court found that Ecology could rely on mathematical modeling, using the best available science, to determine impairment. Finally, the Court rejected appellants’ arguments that the effect must be significant. The Court noted that the statutes do not authorize a de minimus impairment of an existing right. The Court concluded instead that a groundwater withdrawal must be denied if it is established factually that the withdrawal will have any effect on the flow or level of the surface water.

In 2013, in Swinomish Indian Tribal Community v. Ecology, the Court extended the principles announced in its Postema decision to protect an instream flow water right from impairment caused by junior groundwater users, including those using permit-exempt wells. In Swinomish, the Supreme Court considered objections to Ecology’s 2006 amendments to its Skagit River instream flow rule reserving water for future domestic uses that were inconsistent with previously-established minimum stream flows. Ecology had justified its amended rule on a provision in the Water Resources Act that allowed for water withdrawals that conflicted with base flows where “overriding considerations of the public interest” would be served by the withdrawal. The Swinomish Court characterized the “overriding considerations” provision as a “narrow exception” to the rule of strict priority. Consequently, the Supreme Court rejected Ecology’s interpretation of the OCPI exception and invalidated the agency’s amend- ment to the instream flow rule. The Swinomish Court characterized Ecology’s amended rule as an “end-run around the normal appropriation process that does not accord with the prior appropriation doctrine and the detailed statutes implement- ing the doctrine.” Furthermore, the Court rejected Ecology’s attempt to aggregate future uses that cumulatively could cause impairment to the minimum stream flow, declaring that aggregation for purposes of avoiding the impairment analysis “is contrary to the basic principle of the prior appropriation doctrine that the first in time is the first in right.”

The Foster Decision

The City of Yelm is a fast growing community near Olympia. In 1994, the City of Yelm applied for a new water right permit to meet the needs of its growing population. Ecology granted Yelm a new groundwater permit, even though the City’s proposed new well would have depleted stream flows in the Deschutes and Nisqually rivers and certain tributaries, and in Woodland Creek, which flows directly into Puget Sound. Ecology justified its permit decision based on a provision in the Water Resources Act, which allows water withdrawals causing a reduction in base flows where “it is clear that overriding considerations of the public interest will be served.”

Yelm developed a mitigation plan for the proposed well to support Ecology’s permit decision. The mitigation plan included plans to retire existing irrigation water rights and an aquifer recharge project, often referred to as “in-kind” mitigation. Even so, the permit would deplete stream flows during months outside the irrigation season. To offset this impact, the mitigation plan included variety of habitat improvements, often referred to as “out-of-kind” mitigation. The City intended for its proposed habitat improvements to address “habitat limiting factors” for fish and wildlife resources in the affected watersheds. Ecology concluded that the ecological benefits to fish and wildlife would offset the impacts of predicted flow depletions, and issued Yelm a new water right permit.

Sara Foster is the owner of a nearby groundwater well. Ms. Foster appealed Ecology’s decision to the State Pollution Control Hearings Board (PCHB). For the most part, the PCHB ruled in Ecology’s favor, and affirmed the agency’s permit decision. Foster then appealed the PCHB’s decision to Thurston County Superior Court. The Superior Court affirmed the PCHB’s decision. Foster’s appeal was pending before the Thurston County Superior Court when the State Supreme Court decided Swinomish Indian Tribal Community v. Ecology. The Supreme Court granted direct review in light of its Swin- omish decision.

In Foster v. Ecology, the Washington Supreme Court ruled that Ecology exceeded its authority by approving Yelm’s water permit under the narrow OCPI exception. Consequently, the Court reversed the Superior Court and PCHB decisions affirming Ecology’s approval of the Yelm permit. The Court held that a “withdrawal” of water for purposes of statute allowing water use that impairs a minimum flow establish by rule is not synonymous with the term “appropriation.” Consequently, the Court ruled that the OCPI exception does not authorize a permanent appropriation of a legal water right that would cause permanent impairment of minimum flows. Instead, any impairment of minimum flows otherwise authorized by the statute must be temporary.

The Foster Court reiterated that the OCPI exception is not an alternative method for appropriating water. Application of the OCPI exception to authorize a permanent water withdrawal – using out-of-kind mitigation to produce an ecological benefit to offset impairment of an instream flow water right – “makes the sort of end-run around the appropriations process that we expressly rejected in Swinomish.” The Court concluded by reaffirming its Swinomish decision, specifically that the OCPI exception does not authorize an end-run around the appropriation process or the prior appropriation doctrine. According to the Foster Court, minimum flows established by administrative rule “function in most respects as any other water appropriation.”

Finally, the Foster Court rejected the argument that Yelm’s mitigation plan would mitigate the impairment by undertaking other actions to improve aquatic resource habitat that would create a net ecological benefit, despite the net deple- tion of stream flow. The Court reasoned that a mitigation plan that relies on out-of-kind habitat improvements does not mitigate the injury that occurs when a junior water right holder impairs a senior water right. According to the Foster Court, “[t]he water code ... is concerned with the legal injury

36 See RCW 90.54.020(3)(a).
37 Swinomish Indian Tribal Community, 178 Wn. 2d at 576.
38 Id., at 590.
39 Id., at 591.
40 Foster v. Ecology, No. 90386-7 (Washington Sup- preme Court, October 8, 2015).
41 Foster, No. 90386-7 at ¶ 12.
42 Foster, No. 90386-7 at ¶ 15.
43 Foster, No. 90386-7 at ¶ 16.
44 Foster, No. 90386-7 at ¶ 18.

Continued Next Page
caused by impairment of senior water rights and does not turn on notions of 'ecological' injury.\textsuperscript{45} The Court concluded that a water user cannot “mitigate” by way of ecological benefit the legal injury to a senior water right caused by a new water withdrawal.\textsuperscript{46}

\textbf{Analysis}

In \textit{Postema, Swinomish} and \textit{Foster}, the Washington Supreme Court invoked the prior appropriations doctrine to protect instream flows from further depletion by consumptive water users. The Court justified its rulings in these three cases on the basis that an instream flow, once established by regulation, becomes an appropriated water right under Washington law. As such, the Court extended to instream flow water rights the same protections provided under the law to other appropriative water rights. These decisions were entirely predictable after the Legislature adopted 90.22 RCW. Significantly, the cases also provide more protection for senior appropriative water rights, regardless of their purpose of use, provided that the Supreme Court extends to other appropriative water rights the same protections as its decisions provide for instream flow water rights. After all, as the old saying goes, “what is good for the goose is good for the gander.”

Assuming the Supreme Court remains consistent in its analysis, the \textit{Foster} decision will have significant consequences for Ecology water rights permitting. By focusing on the basic rules of Western water law, the Supreme Court’s opinion, although relatively brief, offers a “teaching moment.” The key rulings from the case provide several important lessons for practitioners.

\textbf{Lesson 1:} “OCPI” exception is not an alternative to the traditional permitting process.

First, the \textit{Foster} Court made clear that the so-called “OCPI” exception is not an alternative to the traditional permitting process. The Court already made clear in \textit{Swinomish} that the OCPI exception cannot be used as an “end run” around the statutory appropriations process and the protection afforded to existing water rights. The \textit{Foster} Court made this decision unequivocal by interpreting the word “withdrawal” to exclude permanent appropriations of water. After Foster, the OCPI exception can only be used to support a temporary withdrawal of water, not a permanent appropriation for a new beneficial use of water.

\textbf{Lesson 2:} Every water user must avoid impairment.

Next, the \textit{Foster} Court made clear that every water user must avoid impairment. As the \textit{Foster} Court stated, “our State’s long-established ‘prior appropriation’ and ‘first in time, first in right’ approach to water law, … does not permit any impairment, even a de minimis impairment, of a senior water right.”\textsuperscript{47}

\textbf{Lesson 3:} Out-of-kind mitigation cannot offset impairment.

Third, the \textit{Foster} Court concluded that out-of-kind mitigation does not offset impairment of an existing water right. According to the \textit{Foster} Court, “[t]he water code … is concerned with the legal injury caused by impairment of senior water rights and does not turn on notions of ‘ecological’ injury.”\textsuperscript{48} Instead, a prospective water user must offset its new water use by preventing flow depletions when and where they occur, not just by preventing ecological harm or providing a countervailing ecological benefit.\textsuperscript{49}

\textbf{Conclusion}

The \textit{Foster} decision closes the door to efforts to circumvent the plain wording of the water code that the first water user in time is the first in right. It doesn’t matter what the new use might be, nor does it matter how Ecology – or a local permitting agency – tries to authorize a new water use. Those with settled expectations based on compliance with the water law are entitled to rely on those expectations. This is true regardless of the purpose of use for water, so long as it is declared to be a beneficial use under the water law.

\textsuperscript{47} Foster, No. 90386-7 at ¶ 7. See Postema, 142 Wn. 2d at 90.

\textsuperscript{48} Foster, No. 90386-7 at ¶ 17.

\textsuperscript{49} Foster, No. 90386-7 at ¶ 18.

\textbf{2016 AWRA–WA Annual State Conference}

\textbf{Rural Domestic and Municipal Water Supply}

\textbf{American Water Resources Association – Washington Section}

\textbf{October 26}

\textbf{Seattle, Washington}

\textbf{Details and Registration at:}

\textbf{www.waawra.org}
A REVIEW OF WINTER 2016
By Karin Bumbaco and Nick Bond, Office of the Washington State Climatologist

The summer of 2015 in Washington state will long be remembered for the drought caused by a lack of mountain snow in the winter of 2014/15 made worse by a very warm and dry spring. The forecasts made in the fall of 2015 for the upcoming winter were thus concerning. An El Niño was already in place, and was expected to intensify, with seasonal forecasts calling for a warm and dry winter. So how did the winter actually play out? This article summarizes the winter El Niño-Southern Oscillation (ENSO) conditions, average temperature and precipitation anomalies for Washington state, and the corresponding snowpack with its implications for summer water supply.

El Niño conditions developed in the tropical Pacific Ocean in the spring of 2015 and strengthened through the winter of 2015/16. Sea-surface temperatures (SSTs) exceeded 2°C from October 2015 through February 2016 in the tropical Pacific, classifying this event as the strongest El Niño in 18 years. In fact, the 2015-16 El Niño ranks among the three strongest El Niño events since 1950. Different indices rank the events differently, but 2015/16 is in the company of the historic El Niño events in 1982/83 and 1997/98. At the time of this writing (late June 2016), El Niño has dissipated and neutral ENSO conditions now exist.

Historically, the Pacific Northwest experiences warmer winters with dry conditions and reduced snowpack during a positive ENSO event. The two strongest El Niño events on record – 1982/83 and 1997/98 – played out differently for Washington state however. October through March in both years was warmer than normal, but precipitation was above normal in 1982/83 (6.40” above normal averaged statewide) and near-normal in 1997/98. The weather during the strong El Niño of 1982/83 bore some resemblance to these past two events, especially 1982/83. Figure 1a shows the mean October through March temperatures compared to the 1981-2010 normal for Washington state. Temperatures were above normal, though not as warm as the record warmth measured during the winter of 2014/15. Specifically, this past winter was 2.3°F above normal, averaged statewide, with areas of the northern Cascades and northeastern Washington experiencing the greatest temperature anomalies of between 3 and 4°F. As for precipitation, the total October-March precipitation was much above normal (Figure 1b). Averaged statewide, it was the 6th wettest October-March on record with 10.55” above the 1981-2010 normal. Some locations on the eastern slopes of the Cascades received much more precipitation than usual, exceeding 180% of normal for the season. So, like the strong El Niño event of 1982/83, the 2015/16 winter can be classified as “warm” and “wet”.

Despite the warmer than normal temperatures during the winter season, the above average precipitation brought quite a lot of snow to the state’s mountains. The wet December was especially helpful towards building the state’s snowpack, with impressive snow in lower elevations east of the Cascade Mountains as well. As of April 1, the average snow water equivalent (SWE) percent of normal for every basin throughout Washington was near normal or above normal. Unfortunately, much warmer than usual spring temperatures beginning in April brought rapid melting and runoff, resulting in an early loss of our mountain snow. Averaged statewide, March through May mean temperatures tied 1992 as the second-warmest spring on record. Figure 2 shows the snow water equivalent for the Upper Yakima basin (black line) above normal (red line) as of April 1, but melting out about 2-3 weeks earlier than usual. This is representative of what occurred throughout most of the state this spring. Note while this year’s meltout was early, it is still about a month later than what occurred during the drought of 2015. Streamflows are likely to be below normal for many rivers and streams this summer. The National Weather Service Northwest River Forecast Center April through September natural water supply forecast (Figure 3) projects below normal streamflow throughout most of western WA and southeastern WA. The forecast made on June 16 indicates much below normal streamflow (<25% of normal) for points on the Walla Walla, Little Spokane, Hangman Creek, Nisqually, Chehalis, Willapa, and Naselle rivers. These forecasts are issued daily and are being closely monitored by the Washington Department of Ecology and other federal, state, and local agencies.

In summary, the winter of 2015/16 featured warmer than normal temperatures and above normal precipitation. While El Niño generally brings drier than normal average winter conditions to Washington, the three strongest events on record (including 2015/16) have not followed suit. Though the snow season started out slowly, an active December ensured near-normal snowpack in the mountains by the end of the accumulation season. The warmth this past spring melted the snow earlier than usual, which is liable to result in below-normal
natural streamflows for a majority of the state during the last half of the water year. Looking toward next winter, a “La Niña Watch” has been issued by the Climate Prediction Center, indicating that a weak-to-moderate La Niña is likely to develop by fall. This stacks the deck for above normal precipitation in the Pacific Northwest during the upcoming fall and winter. These projections will be refined in the coming months.

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### Legislature

reservations are consistent with the legislative intent for the adopted rules for the Dungeness Basin and the Wenatchee Basin.

SB 6589 – Feasibility study to determine whether water storage would provide non-interruptible water resources to users of permit exempt wells in the Skagit Basin. The bill provides in part “NEW SECTION. Sec. 1. (1) The Department of Ecology, in cooperation with the state department of health, Skagit county, tribes, and nonmunicipally owned public water systems in Skagit county, shall conduct a study to examine the feasibility of using effectively sized water storage to recharge the Skagit river basin when needed to meet minimum instream flows and provide noninterruptible water resources to users of permit exempt wells within the Skagit River Basin.

(2) The Department of Ecology must submit a report of the study’s findings to the standing committees of the legislature with oversight of water resources and fiscal issues by December 1, 2016.”

Ecology held its first meeting June 2 to scope the study. Among the items proposed for the study are
• Aquifer recharge focus, consider direct flow augmentation
• Store high winter flows (wetlands, ponds)
• Pipe water into tributaries
• Truck water and store it
• Pump wells and store/augment flow
• Use reclaimed water to augment flow

Some of the bills proposed in 2015 that were considered and not passed in 2016 may likely be re-visited in the next legislative session. These are:

SB 5129 – Use of OCP in management of waters of the state.
SB 5136 – Repeal and adopt a new Skagit instream flow rule.

Other bills that were not passed but the contents of which Dave believes may be revisited are:

HB 2430 – Preserving water resources for an array of water supply needs by updating water conservation standards for appliances.
HB 2788/SB 6215 – Identifying water rights for municipal water supply purposes
SB 6584 – Establishing a proof of water reliance application process, which shall not be considered to be causing impairment of minimum flows.

Looking forward to the AWRA-WA annual conference, Dave explained that Washington water rights law does not give priority to domestic water right use. He expects that municipal water rights will become an urgent issue for Washington state government, requiring answers to such questions as “What happens to inchoate [unused] water rights when water systems consolidate?” and “Can municipal systems . . . use irrigation rights to serve domestic and municipal uses?”

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**Figure 2.**

**Figure 3.**

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