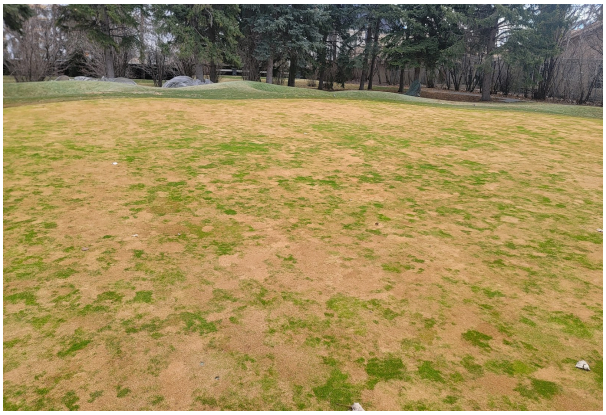
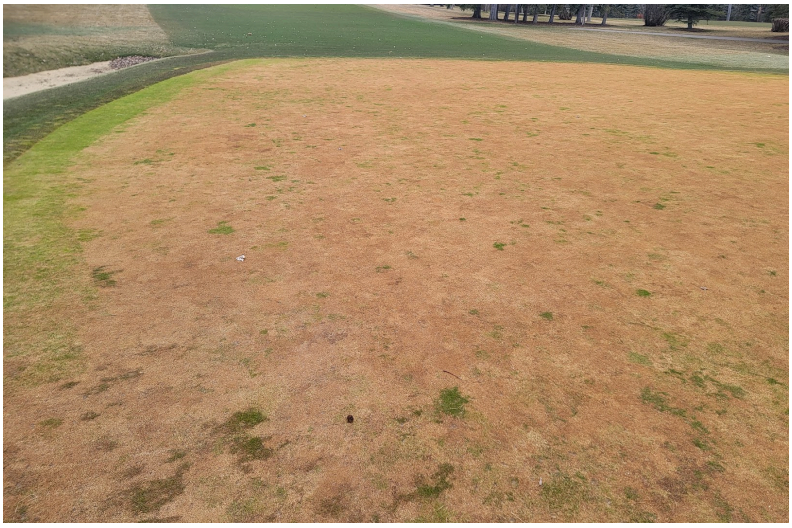
Alberta Turfgrass Research Q1 update Apr-Jun 2024

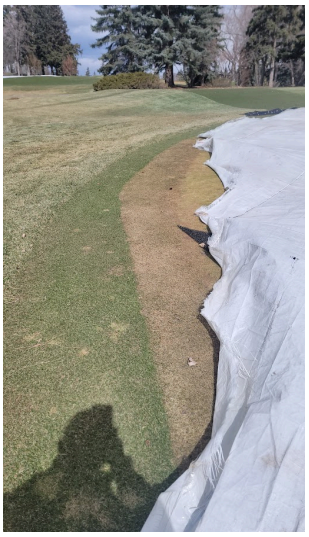


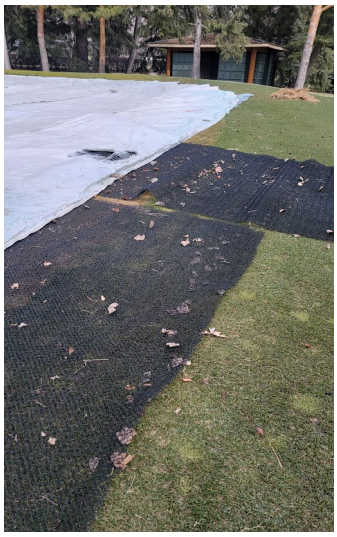
The start to the 2024 growing season was a rocky one for many. Widespread turf loss was recorded throughout Alberta and the prairies, confirmed through lab diagnosis as abiotic causes.
For two years in a row, we have seen exceptionally warm fall temperatures (mid to high twenties), followed by an immediate drop to <-15'C with snow in the immediate forecast. Forced to tarp or risk losing our poa annua, greens lost the typical hardening period, forcibly put to bed without a frost or a night below ambient temperatures in the mid twenties. Greens were tarped with 21-23'C, daily lows between 5-10'C right through October 23rd! Temperatures dropped dramatically from 20'C to -17'C and recorded snow over a 5 day period. Despite our advances in winter protection, winter 2024 was a reminder we still have alot to learn, rolling with new climate realities as they impact our our winter management programs .

Images above/below courtesy J.Pick, ATRF

Despite the use of proven insulation systems and impermeable tarps, turf losses were unacceptable. Denied a typical fall hardening period for a second year in a row, our turf lost time to acclimate, dry out, or get a frosty night or two before covers were installed. The physiological change in the fall is not only due to temperature, but also light as the days get shorter the plant also begins to prepare itself by reducing top growth, storing carbs/sugars, preparing for 170-180 darkness ahead. We acknowledge this in the field when our mowing schedule drops from 7d/wk to 2-3x/wk.







The impermeables did their job, ruling out anoxia and desiccation.. Temperatures recorded under tarps were below critical threshold levels, -2'C maximum which also rules out low temperature kill. Data also indicated temperatures under the tarps were not high enough to burn them out. Subsequently, turf managers have found themselves between a rock and a hard place: Option A: Don't cover the greens so they can harden = temperature drops to -15C and all the poa dies. Option B: Cover them now (+23'C) and risk the forced change from actively growing to a cover of darkness for 160 days. Tarping in 21'C has also proven to cause stress.

How turfgrass physiology is being affected by this new climate trend requires further research - the relationship of fall hardening, and effect of dramatic temperature swings during that critical period. We scratch our heads asking the same question over and over again - even if we could identify "why" the turf isn't hardening sufficiently - can we do anything

about it? The ATRF are committed to finding a solution, specifically pursuing another tarping and insulating research project for golf greens in 2024/25

This summer, the Alberta Turfgrass Research Foundation has begun testing for partners; The City of Calgary, Sod Growers Commodity Group, and A-List Sustainable Turf. The project partners have invested in determining minimum sustainable levels of irrigation to avoid primary wilt as opposed to drought tolerance, where the latter waits for the collapse of a species. Utilizing Calgary's perennial “Yard Smart” formula of mixed plants, adjacent are 128 plots of sod produced by eight entries from the leading sod producers in Western Canada chosen for their drought avoidance properties.

In addition to the Yard Smart species being tested, we have incorporated several low growing ground covers for the same. Bottom to top, Creeping Thyme, Sedum, Beeturf (West Coast Seeds), and Goosefoot. The next stage of the trial will also run a micro clover.

During the three year trial, we hope to ultimately produce a functional formula for landscape architects and city planners where they can adequately design residential and commercial infrastructure, providing sustainable planting plans with adequate piping and delivery capacity for sufficient irrigation. We hope this model will prove as a foundation for future city planners and architects not just in Calgary, but in cities and municipalities across Canada. .

A-List Sustainable Turf:

Thirty six different varieties of ryegrass are being evaluated at the research foundation this year, for A-List sustainable turf. We join contributors Purdue University, University of California, Riverside, NC State, Rutgers,Utah State, University of Wisconsin-Madison, UConn, Virginia Tech, Ohio State, Oregon State U, and Iowa State in perennial ryegrass evaluations applicable to Northern Canadian climates The goal is to quantifiably measure the properties of the various turf samples for their color, resilience to drought, minimal inputs, in the spirit of sustainability.

Alberta Turfgrass
Research Foundation

Membership Update
Our annual membership drive went out June 1st, reporting individual club membership is up. Just ahead of forecast, we expect our annual target of $40K will be realized before the end of quarter two. Growth and attrition are hand in hand, however the ATRF membership base has been climbing steadily since 2022.

Turf Program update:
The Olds College Online Turfgrass Certificate finished its final level III this spring with another 34 graduates who now receive transfer credit into our full time turf diploma program. The full time Turf Management Diploma has maxed out once again at 32 students, oversubscribed again for its 11th year. With another full section on the waiting list, is the largest in the country, continuing to attract students to its compressed block system, and summer internship program. With some room still to grow in the applied degree, we are expecting another full section into 3rd year, with BASc degree students back on Campus in January 2025 for our Bachelor of Golf Course Management.

For more information regarding Turf research, past projects or future opportunities, check our website Alberta Turfgrass Research Foundation. For program information in Olds College Turf Management Certificate, Diploma or Applied Science Degree in Golf Course management, visit: Oldscollege.ca, or contact Jason Pick, 403-556-8243

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