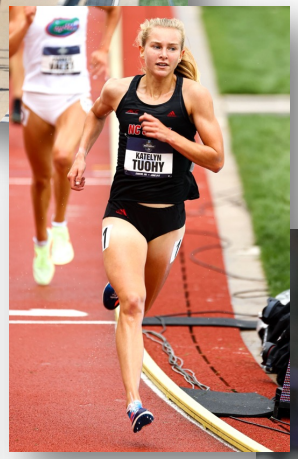
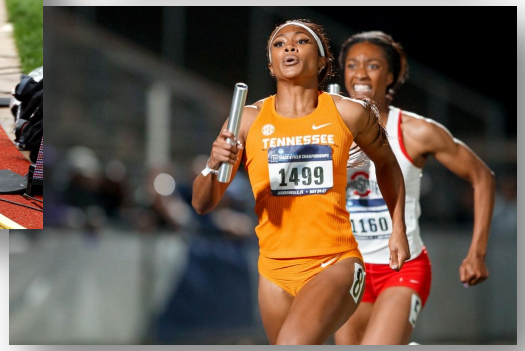
NCAA Outdoor Track & Field Data 2015-2023 - An Analysis

Effects of the Global COVID-19 Pandemic and Carbon-Plated Shoe Technology on Annual Performance Lists 2015-2023





NCAA Outdoor Track & Field Analysis 2015-2023 - Synopsis

Introduction

The past decade has seen two major impacts on the performance of NCAA (USA National Collegiate Athletic Association) athletes:

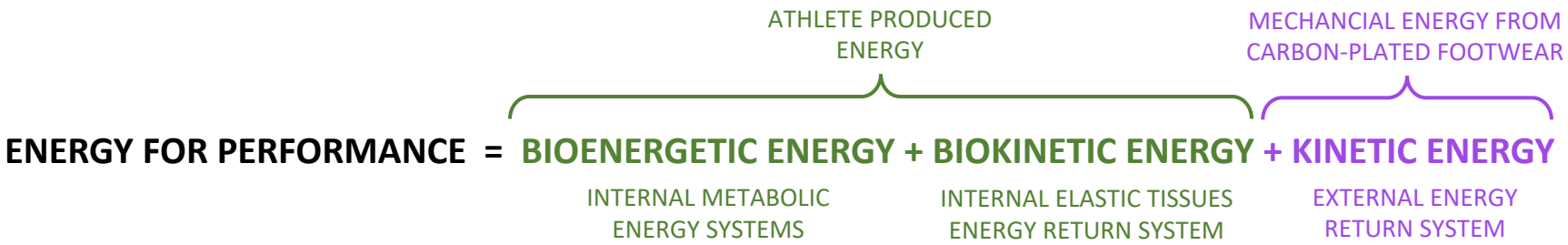
1. The COVID-19 Pandemic
2. The introduction and availability of Carbon-plated Footwear Technology

How can we identify and evaluate this impact of both COVID-19 and Carbon-plated Footwear Technology?

Performance Criteria

Examining performance criteria over time is one way of evaluating an impact. Normally, the number of athletes globally who exceed a certain performance criterion is relatively stable from year-to-year, with slight fluctuations in Olympic and pre-Olympic years. Also, it is expected to see a gradual increase in the number of athletes exceeding the criterion over time, through natural 'event development'. The years from 2015-2023 are analysed here. The NCAA Outdoor season is effectively closed, each year, the week of the NCAA Championships. This permits a mid-year analysis of collegiate athletes in the USA that is both terminal and valid.

Since the Carbon-plated footwear provides an added and external mechanical kinetic unit to the body's internal kinetic chain we can simply and accurately compare the differences in performance from when Carbon-plated shoes and spikes became globally available to the previous period, when athletes wore 'conventional' shoes and spikes.



Fatigue-Resistant Performance Enhancement

Carbon-plated track & field spikes specifically provide a fatigue-resistant performance enhancement to athletes through two potential sources:

1. An external, metabolic-sparing kinetic energy return
   - most relevant to improving Running Economy in Endurance: 800m - Marathon
2. Power amplification through the timing of an external, non-fatiguing kinetic energy return
   - most relevant in the force production phases of the 'Power' events: Sprints, Hurdles, Jumps, Throws and Combined Events.

What the Graphs Reveal by Event Group

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Endurance

800m - 10,000m All events show the significant impact of Carbon-plated spikes in 2021 on improving performance for both Men and Women. In 2022, however, Women had three events: 1500m, 3000 S/C and 5000m with reduced numbers that were still well above the numbers before Carbon-plated footwear became available. In 2023 all events for Women, except 800m, showed further significant improvement on the enhanced 2021 numbers. Men revealed significant improvement in all events in 2022 but exhibited a similar 'fallback' in 2023 that the Women had exhibited in 2022. The only event for Men to improve in 2023 was 800m which showed significant increase in numbers of athletes exceeding the criterion.

Sprints & Hurdles

100m - 400m All events show the significant impact of Carbon-plated spikes on improving performance for Men in 2021-2023 while Women show continuous improvements in firstly 100m, slightly less in 400m and in 2023, the 200m has recovered from the impact of COVID

Hurdles All hurdles show improvement continuing in 2023, led by very significant improvement in the Men's 110mH

Jumps - Horizontal and Vertical

Jumps In the Tiple Jump and High Jump, Men appear to still be in the process of recovering from the impact of COVID. The improved performance in the Long Jump in 2022 continues in 2023 and is joined by improvement in the Pole Vault. In all Jumps, Women show significant improvement in2021 and 2022, except for the fall back in LJ in 2022. In 2023, Long Jump and High Jump improved but Triple Jump and Pole Vault both showed a slight fall back to 2021 levels.

Throws - Linear and Rotational

Throws Men appear to still be in the process of recovering from the impact of COVID In Shot and Javelin but show significant improvement in Discus and Hammer. Women show significant improvements in all throws in 2021. Only the Discus continues this trend in 2022, with fall back in Discus and Javelin in 2023.

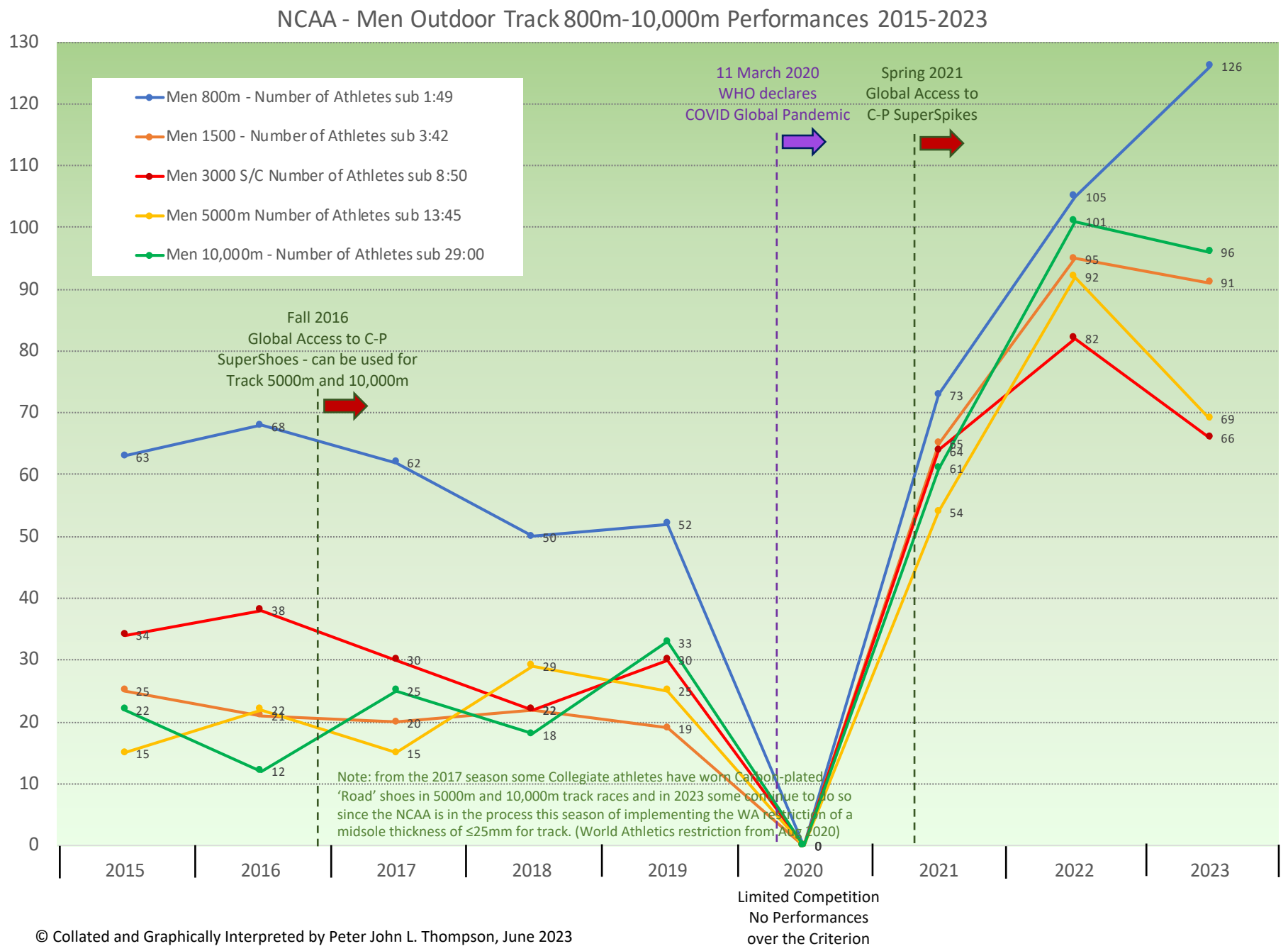
Combined Events

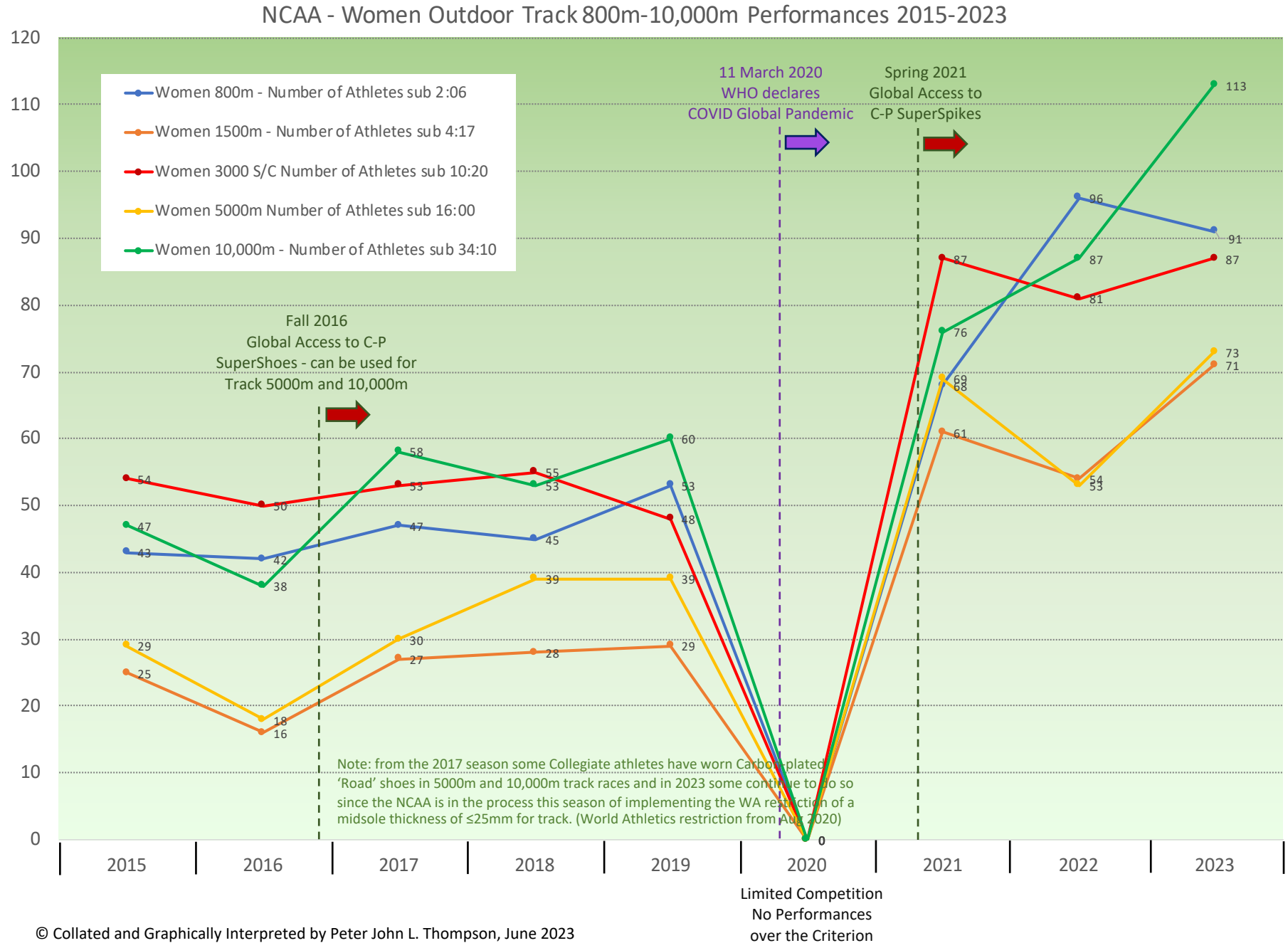
Decathlon The number of athletes exceeding 7,000 pts shows significant improvement in 2021 and 2022 but a slight fall back in2023. There has been little change at 7,500 pts

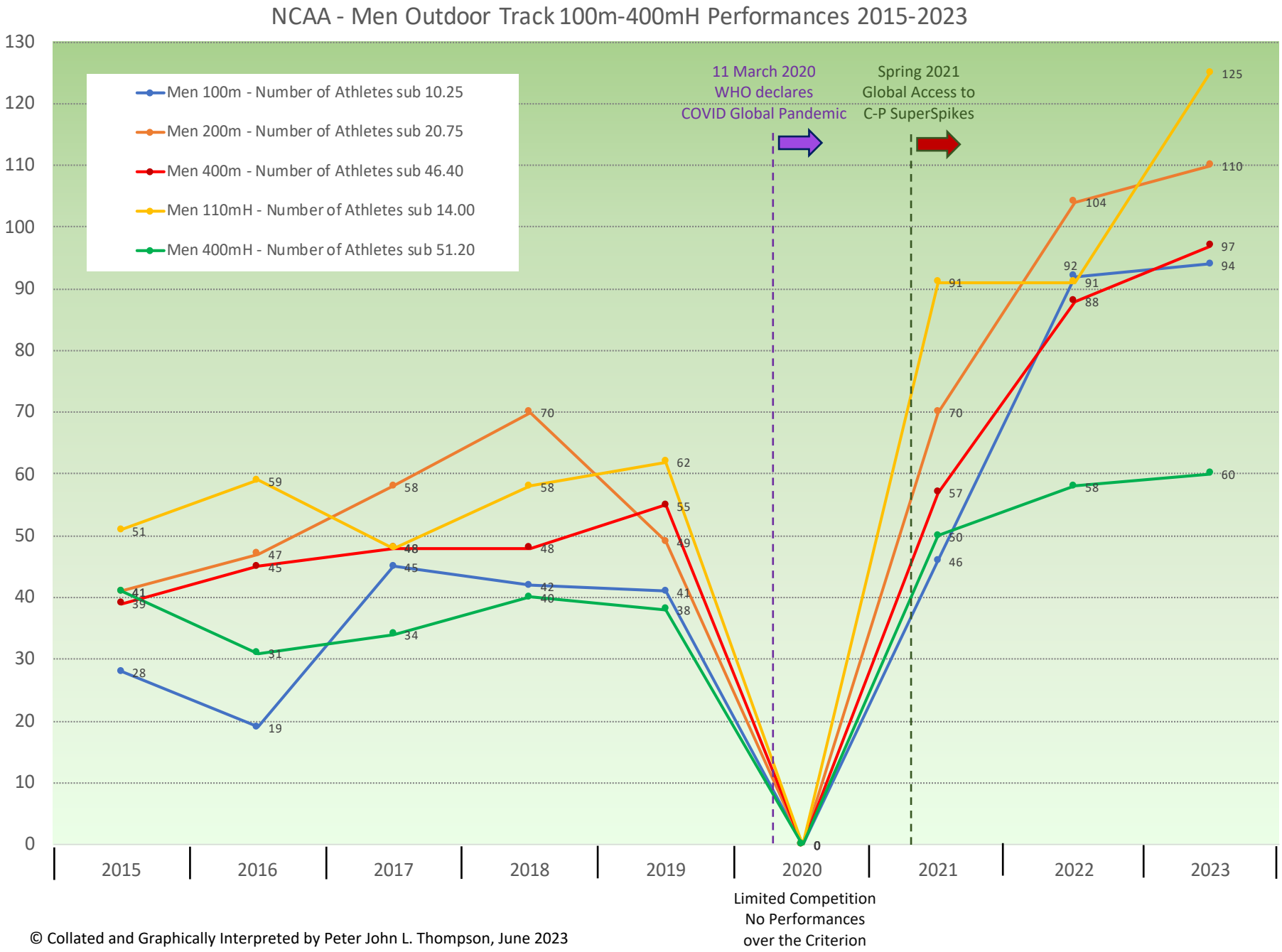
Heptathlon The number of athletes exceeding 5,100 pts shows a drop while 5,500 pts shows no significant change.
Note: With CE it may be an age-related response we are viewing since most CE athletes only really develop after Collegiate age.

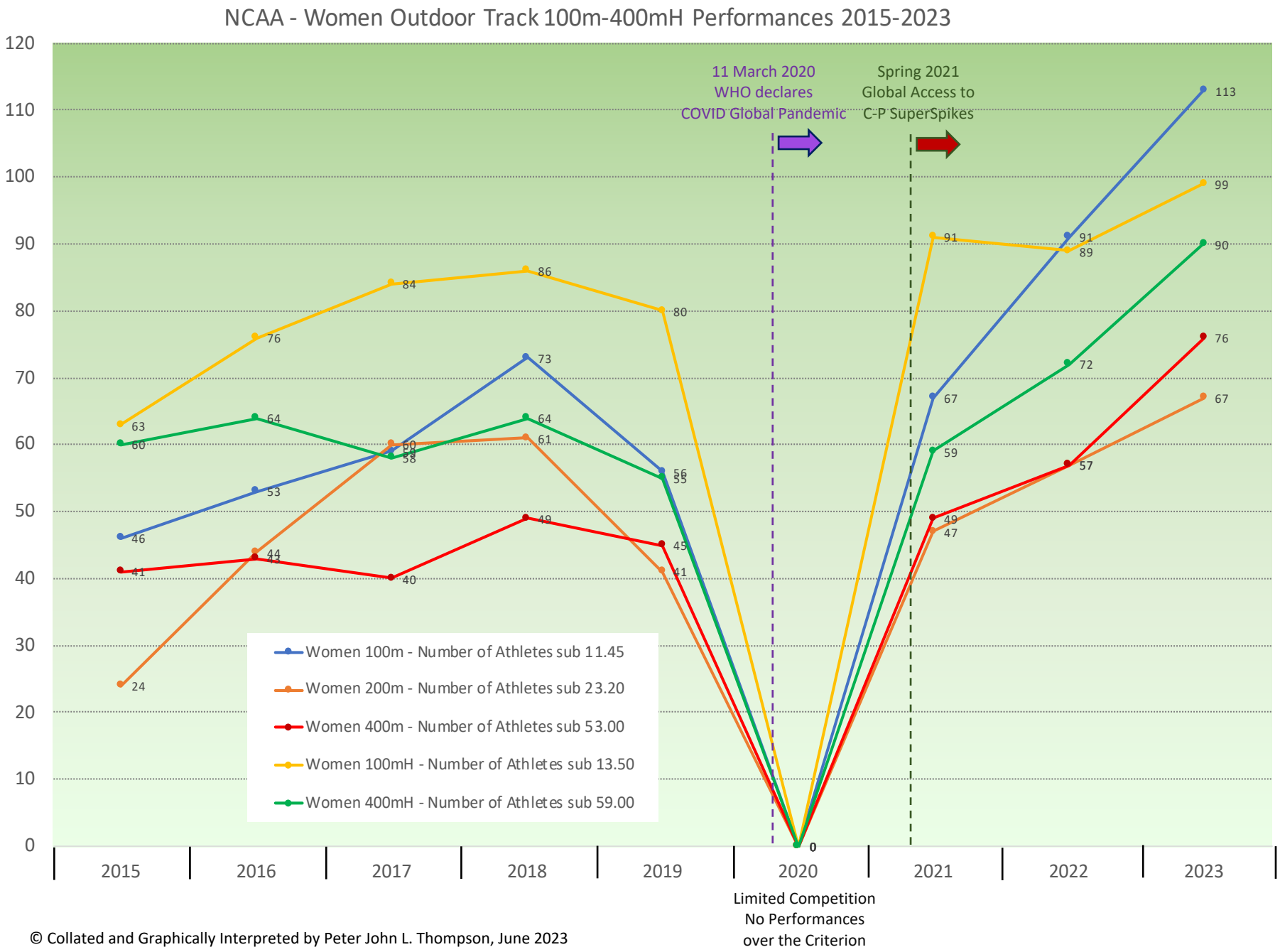
Conclusion

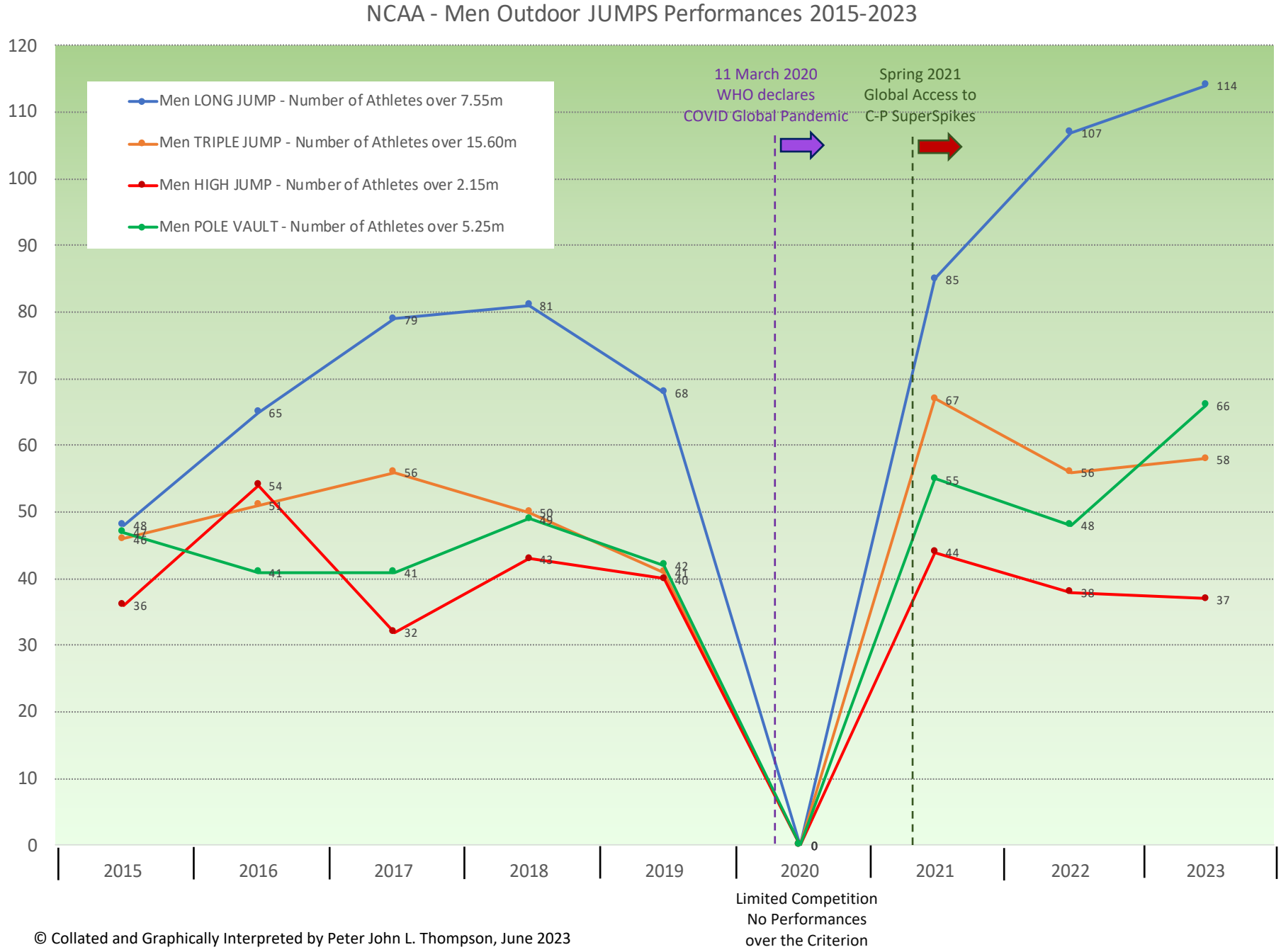
There is no disputing the impact of Carbon-plated spike technology on the running events although the downward movement in 2022 and 2023 in some events requires annual re-evaluation for long-term trends. The other event groups show impact but not such a consistent picture. This could be because the Carbon-plated footwear for the 'power' events was developed later, is not as widely available yet, or only available to the very elite Collegiate athletes.

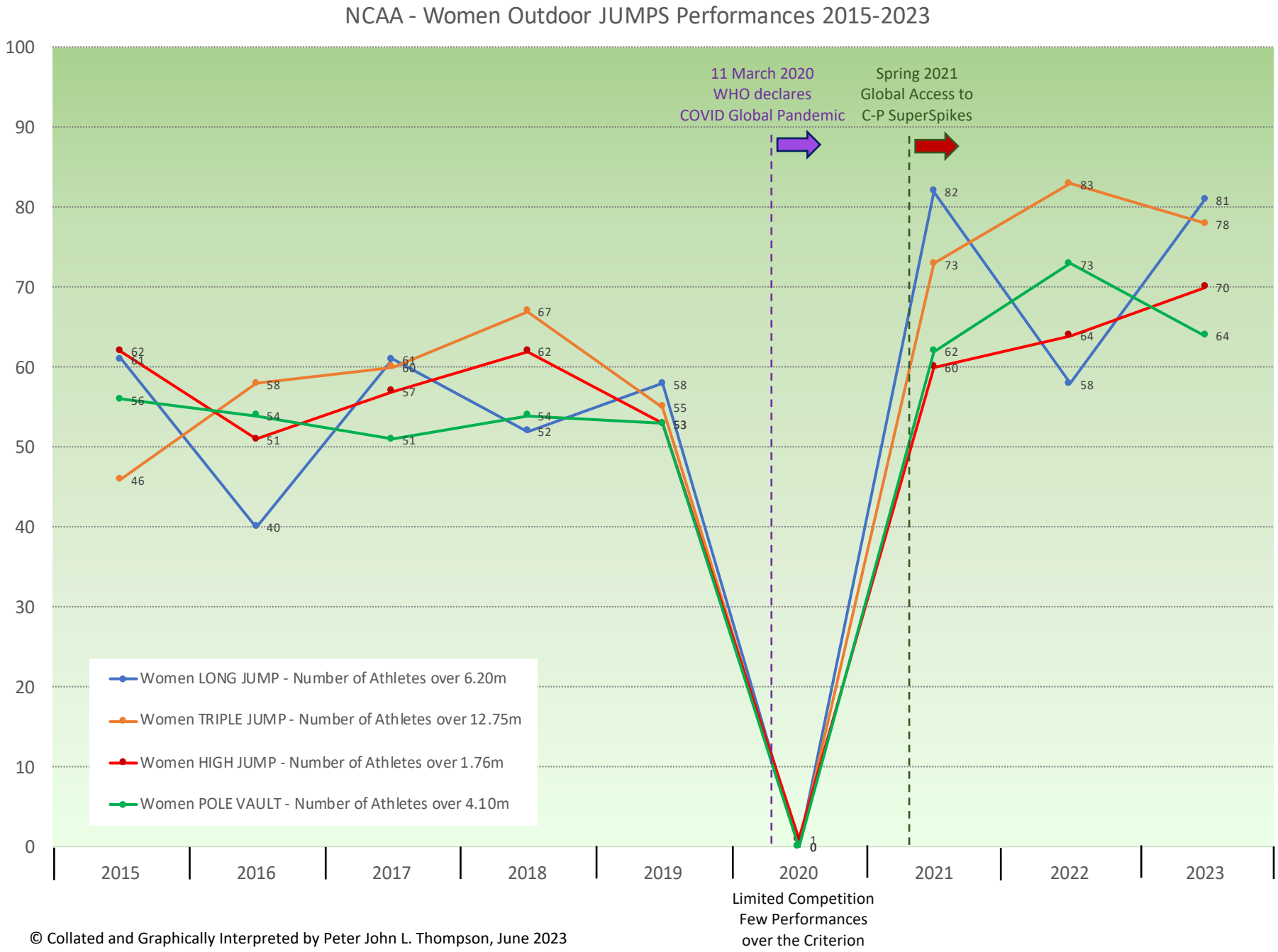




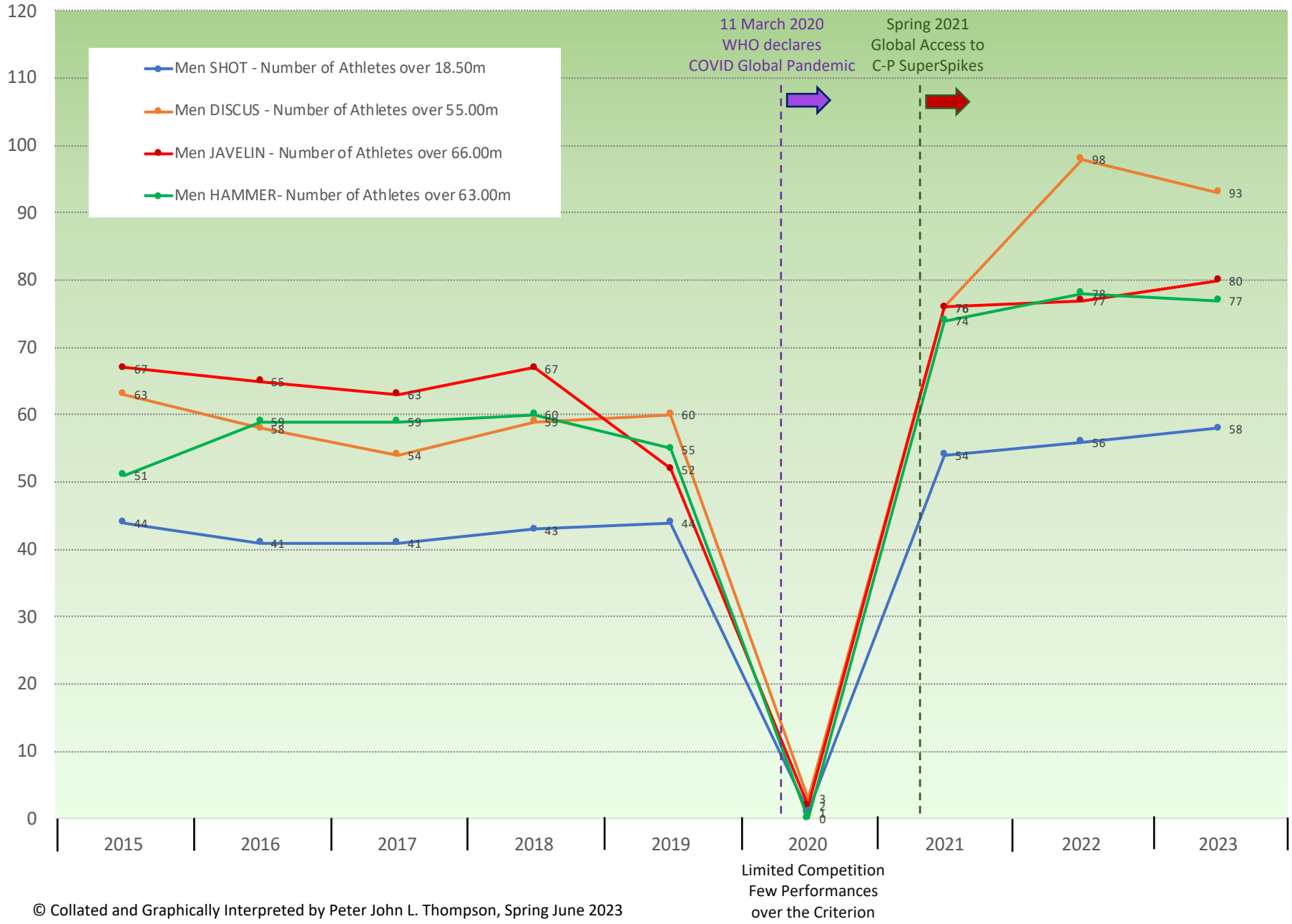




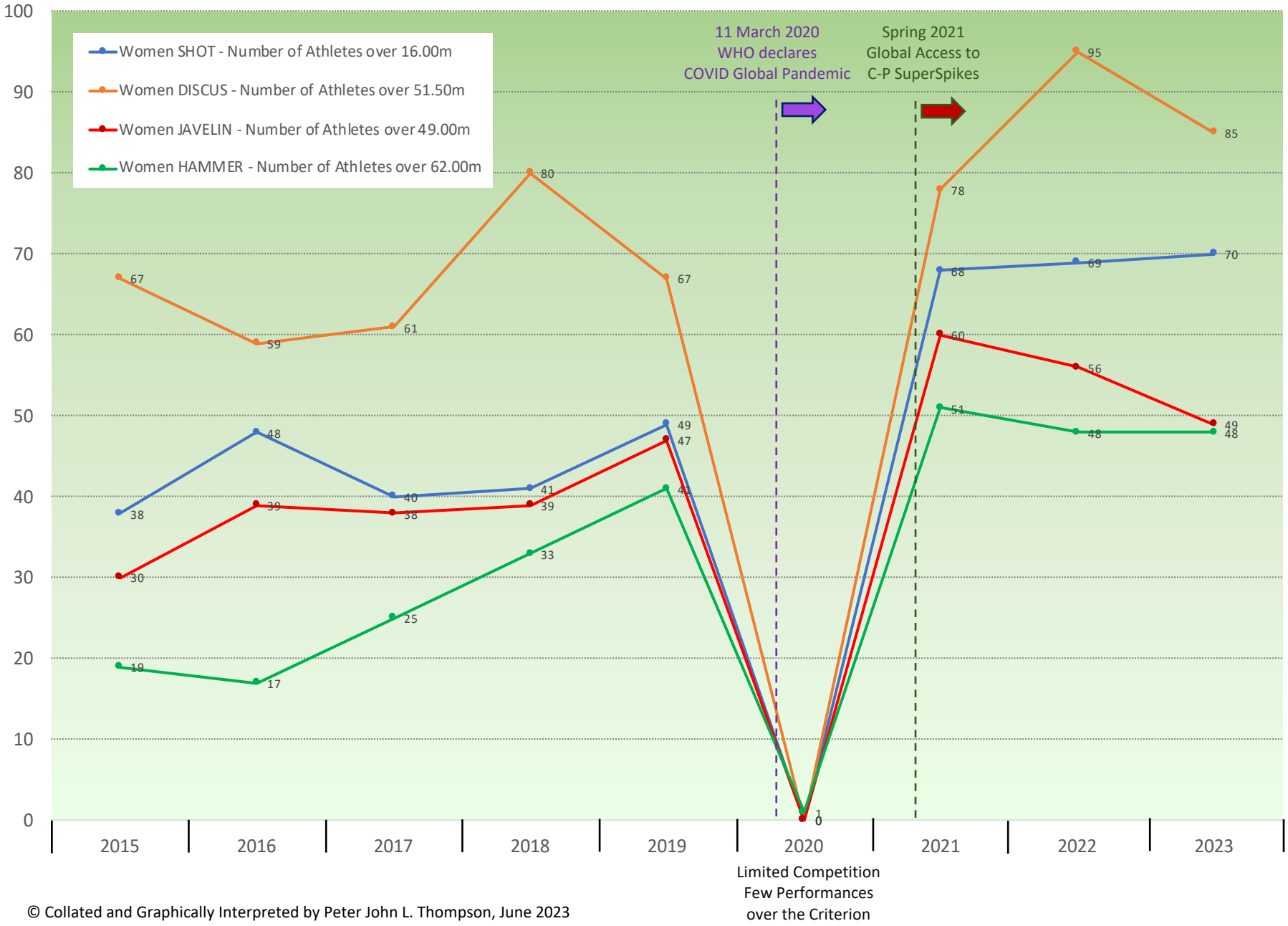



NCAA - Women Outdoor JUMPS Performances 2015-2023
11 March 2020
WHO declares
COVID Global Pandemic
Spring 2021
Global Access to
C-P SuperSpikes
Women LONG JUMP - Number of Athletes over 6.20m
Women TRIPLE JUMP - Number of Athletes over 12.75m
Women HIGH JUMP - Number of Athletes over 1.76m
Women POLE VAULT - Number of Athletes over 4.10m
Limited Competition
Few Performances
over the Criterion
© Collated and Graphically Interpreted by Peter John L. Thompson, June 2023

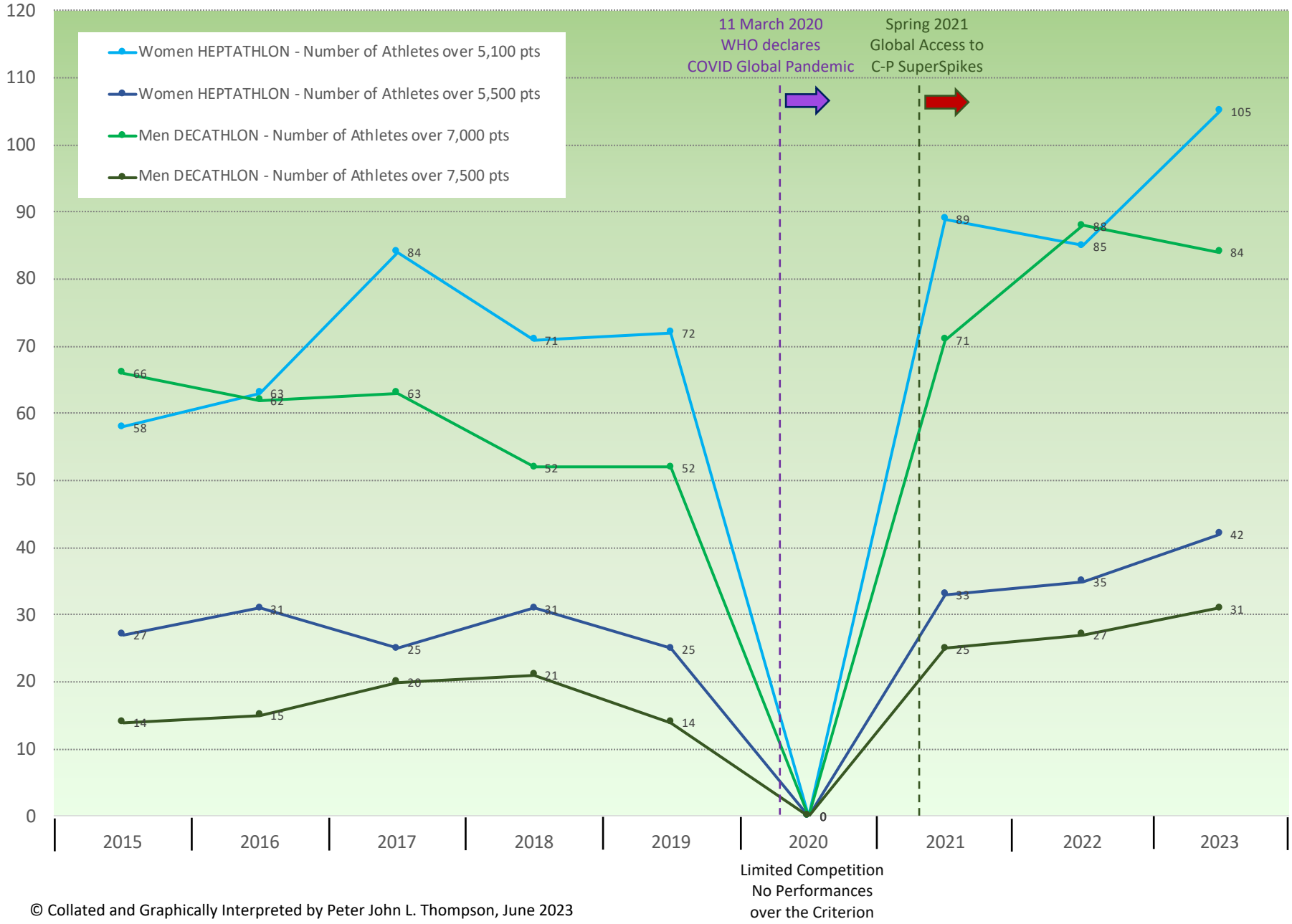
NCAA - Men Outdoor THROWS Performances 2015-2023



NCAA - Women Outdoor THROWS Performances 2015-2023



NCAA - Men and Women COMBINED EVENTS Performances 2015-2023



TFRRS Data

TFRRS Data was used in the preparation of this Report

Sourced from the Public Website

https://www.tfrrs.org/outdoor_lists.html