

- **News**
- **SEO Parramatta**
- **Web Design Parramatta**
- **Local SEO Parramatta**
- **Parramatta SEO services**

- **More**

[Parramatta web design agency](#)[Search Engine Optimisation Parramatta](#)
[Affordable SEO Parramatta](#)[Custom web design Parramatta](#)[eCommerce web design Parramatta](#)[Parramatta digital marketing](#)[Best SEO agency Parramatta](#)
[SEO expert Parramatta](#)[Responsive web design Parramatta](#)[Small business SEO Parramatta](#)[Web development Parramatta](#)[SEO consultant Parramatta](#)
[Website designers Parramatta](#)[SEO company Parramatta](#)[Web design company Parramatta](#)[SEO audit Parramatta](#)

- **About Us**

- **Contact Us**



Search Engine Optimisation Parramatta —

- [Parramatta web design agency](#)
- [Search Engine Optimisation Parramatta](#)
- [Affordable SEO Parramatta](#)
- [Custom web design Parramatta](#)
- [eCommerce web design Parramatta](#)
- [Parramatta digital marketing](#)
- [Best SEO agency Parramatta](#)

Maximise your business potential with SEO tracking and reporting Parramatta We deliver impactful strategies designed to boost your brand awareness, improve online visibility, and generate a steady flow of qualified leads in Parramatta

Transform your business growth with Full-service web design Parramatta Our strategies enhance visibility, attract targeted traffic, and maximise conversions for sustained success Partner with us for measurable digital marketing outcomes today

Maximise your business potential with Affordable digital marketing Parramatta We deliver impactful strategies designed to boost your brand awareness, improve online visibility, and generate a steady flow of qualified leads in Parramatta

Effective [Web Design Parramatta](#) Sydney.

Affordable SEO Parramatta

Choose excellence in digital marketing with SEO services in Parramatta Our proven approaches drive website traffic, enhance customer engagement, and significantly improve conversion rates, supporting long-term business success in Parramatta

Maximise your business potential with Parramatta website redesign We deliver impactful strategies designed to boost your brand awareness, improve online visibility, and generate a steady flow of qualified leads in Parramatta

Maximise your business potential with Best web designers in Parramatta We deliver impactful strategies designed to boost your brand awareness, improve online visibility, and generate a steady flow of qualified leads in Parramatta

Best [Local SEO](#) Parramatta.



Custom web design Parramatta

Choose excellence in digital marketing with Parramatta SEO digital experts. Our proven approaches drive website traffic, enhance customer engagement, and significantly improve conversion rates, supporting long-term business success in Parramatta.

Transform your business growth with Web design for local business Parramatta Our strategies enhance visibility, attract targeted traffic, and maximise conversions for sustained success Partner with us for measurable digital marketing outcomes today

Experience outstanding online performance through Parramatta SEO optimisation Our expert team specialises in delivering solutions that improve rankings, drive engagement, and generate valuable leads for consistent business growth in Parramatta

range of [SEO Packages Parramatta](#) Sydney.

SEO company Parramatta - SEO Parramatta

1. Parramatta SERP Tracking
2. Voice Search Optimisation Parramatta
3. SEO Parramatta

eCommerce web design Parramatta

Maximise your business potential with Parramatta SEO for eCommerce We deliver impactful strategies designed to boost your brand awareness, improve online visibility, and generate a steady flow of qualified leads in Parramatta

Transform your business growth with Web design SEO integration Parramatta Our strategies enhance visibility, attract targeted traffic, and maximise conversions for sustained success Partner with us for measurable digital marketing outcomes today

Transform your business growth with Advanced SEO strategies Parramatta Our strategies enhance visibility, attract targeted traffic, and maximise conversions for sustained success Partner with us for measurable digital marketing outcomes today

Top [Digital Marketing Parramatta](#) NSW.

SEO company Parramatta - SEO Parramatta

1. SEO Copywriting Parramatta
2. SEO Competitor Analysis Parramatta
3. SEO Strategy Parramatta

KEY ADVANTAGES LOCAL SEO



SYDNEY WEBSITE DESIGN AGENCY
SUITE 87, LEVEL 33, AUSTRALIA SQUARE,
265 GEORGE ST, SYDNEY NSW 2000
PHONE: 1300 684 339

CONTENT MARKETING
TYPES FOR SMALL BUSINESS
AND BRAND BUILDING

Parramatta digital marketing

Experience outstanding online performance through Custom website packages Parramatta Our expert team specialises in delivering solutions that improve rankings, drive engagement, and generate valuable leads for consistent business growth in Parramatta

Take your digital presence further with SEO campaigns Parramatta We develop custom strategies aimed at increasing your online visibility, improving search engine rankings, and achieving sustainable growth for your Parramatta-based business

Experience outstanding online performance through Parramatta online marketing Our expert team specialises in delivering solutions that improve rankings, drive engagement, and generate valuable leads for consistent business growth in Parramatta

SEO company Parramatta - Parramatta SERP Tracking

1. Website Speed Optimisation Parramatta
2. SEO Tools Parramatta
3. Conversion Rate Optimisation Parramatta
4. Parramatta SEO Reporting

Best SEO agency Parramatta

Maximise your business potential with Web hosting and design Parramatta We deliver impactful strategies designed to boost your brand awareness, improve online visibility, and generate a steady flow of qualified leads in Parramatta

Choose excellence in digital marketing with Affordable website packages Parramatta Our proven approaches drive website traffic, enhance customer engagement, and significantly improve conversion rates, supporting long-term business success in Parramatta

Experience outstanding online performance through WordPress SEO Parramatta Our expert team specialises in delivering solutions that improve rankings, drive engagement, and generate valuable leads for consistent business growth in Parramatta

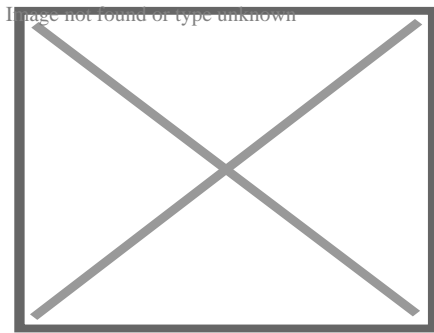


SYDNEY WEBSITE DESIGN AGENCY
SUITE 87, LEVEL 33, AUSTRALIA SQ
265 GEORGE ST. SYDNEY NSW 2000
PHONE: 1300 684 339

**SEO SERVICES EXPERT'S MAIN
IS TO GROW YOUR BUSINESS C
WITH CONTINUES STRA**

About Web crawler

This article is about the internet bot. For the search engine, see [WebCrawler](#). "Web spider" redirects here; not to be confused with [Spider web](#). "Spiderbot" redirects here. For the video game, see [Arac \(video game\)](#).



Architecture of a Web crawler

A **Web crawler**, sometimes called a **spider** or **spiderbot** and often shortened to **crawler**, is an **Internet bot** that systematically browses the **World Wide Web** and that is typically operated by search engines for the purpose of **Web indexing** (*web spidering*).^[1]

Web **search engines** and some other **websites** use Web crawling or spidering **software** to update their **web content** or indices of other sites' web content. Web crawlers copy pages for processing by a search engine, which **indexes** the downloaded pages so that users can search more efficiently.

Crawlers consume resources on visited systems and often visit sites unprompted. Issues of schedule, load, and "politeness" come into play when large collections of pages are accessed. Mechanisms exist for public sites not wishing to be crawled to make this known to the crawling agent. For example, including a **robots.txt** file can request **bots** to index only parts of a website, or nothing at all.

The number of Internet pages is extremely large; even the largest crawlers fall short of making a complete index. For this reason, search engines struggled to give relevant search results in the early years of the World Wide Web, before 2000. Today, relevant results are given almost instantly.

Crawlers can validate **hyperlinks** and **HTML** code. They can also be used for **web scraping** and **data-driven programming**.

Nomenclature

[\[edit\]](#)

A web crawler is also known as a *spider*,^[2] an *ant*, an *automatic indexer*,^[3] or (in the **FOAF** software context) a *Web scutter*.^[4]

Overview

[\[edit\]](#)

A Web crawler starts with a list of **URLs** to visit. Those first URLs are called the *seeds*. As the crawler visits these URLs, by communicating with **web servers** that respond to those URLs, it identifies all the **hyperlinks** in the retrieved web pages and adds them to the list of URLs to visit, called the *crawl frontier*. URLs from the frontier are **recursively** visited according to a set of policies. If the crawler is performing archiving of **websites** (or **web archiving**), it copies and saves the information as it goes. The archives are usually stored in such a way they can be viewed, read and navigated as if they were on the live web, but are preserved as 'snapshots'.^[5]

The archive is known as the *repository* and is designed to store and manage the collection of **web pages**. The **repository** only stores **HTML** pages and these pages are stored as distinct files. A repository is similar to any other system that stores data, like a modern-day database. The only difference is that a repository does not need all the functionality offered by a database system. The repository stores the most recent version of the web page retrieved by the crawler.^[citation]

The large volume implies the crawler can only download a limited number of the Web pages within a given time, so it needs to prioritize its downloads. The high rate of change can imply the pages might have already been updated or even deleted.

The number of possible URLs crawled being generated by server-side software has also made it difficult for web crawlers to avoid retrieving **duplicate content**. Endless combinations of **HTTP GET** (URL-based) parameters exist, of which only a small selection will actually return unique content. For example, a simple online photo gallery may offer three options to users, as specified through HTTP GET parameters in the URL. If there exist four ways to sort images, three choices of **thumbnail** size, two file formats, and an option to disable user-provided content, then the same set of content can be accessed with 48 different URLs, all of which may be linked on the site. This **mathematical combination** creates a problem for crawlers, as they must sort through endless combinations of relatively minor scripted changes in order to retrieve unique content.

As Edwards *et al.* noted, "Given that the **bandwidth** for conducting crawls is neither infinite nor free, it is becoming essential to crawl the Web in not only a scalable, but efficient way, if some reasonable measure of quality or freshness is to be maintained."^[6] A crawler must carefully choose at each step which pages to visit next.

Crawling policy

[edit]

The behavior of a Web crawler is the outcome of a combination of policies:^[7]

- a *selection policy* which states the pages to download,
- a *re-visit policy* which states when to check for changes to the pages,
- a *politeness policy* that states how to avoid overloading **websites**.
- a *parallelization policy* that states how to coordinate distributed web crawlers.

Selection policy

[edit]

Given the current size of the Web, even large search engines cover only a portion of the publicly available part. A 2009 study showed even large-scale **search engines** index no more than 40–70% of the indexable Web;[8] a previous study by **Steve Lawrence** and **Lee Giles** showed that no **search engine indexed** more than 16% of the Web in 1999.[9] As a crawler always downloads just a fraction of the **Web pages**, it is highly desirable for the downloaded fraction to contain the most relevant pages and not just a random sample of the Web.

This requires a metric of importance for prioritizing Web pages. The importance of a page is a function of its **intrinsic** quality, its popularity in terms of links or visits, and even of its URL (the latter is the case of **vertical search engines** restricted to a single **top-level domain**, or search engines restricted to a fixed Web site). Designing a good selection policy has an added difficulty: it must work with partial information, as the complete set of Web pages is not known during crawling.

Junghoo Cho *et al.* made the first study on policies for crawling scheduling. Their data set was a 180,000-pages crawl from the stanford.edu domain, in which a crawling simulation was done with different strategies.[10] The ordering metrics tested were **breadth-first**, **backlink** count and partial **PageRank** calculations. One of the conclusions was that if the crawler wants to download pages with high Pagerank early during the crawling process, then the partial Pagerank strategy is the better, followed by breadth-first and backlink-count. However, these results are for just a single domain. Cho also wrote his PhD dissertation at Stanford on web crawling.[11]

Najork and Wiener performed an actual crawl on 328 million pages, using breadth-first ordering.[12] They found that a breadth-first crawl captures pages with high Pagerank early in the crawl (but they did not compare this strategy against other strategies). The explanation given by the authors for this result is that "the most important pages have many links to them from numerous hosts, and those links will be found early, regardless of on which host or page the crawl originates."

Abiteboul designed a crawling strategy based on an **algorithm** called OPIC (On-line Page Importance Computation).[13] In OPIC, each page is given an initial sum of "cash" that is distributed equally among the pages it points to. It is similar to a PageRank computation, but it is faster and is only done in one step. An OPIC-driven crawler downloads first the pages in the crawling frontier with higher amounts of "cash". Experiments were carried in a 100,000-pages synthetic graph with a power-law distribution of in-links. However, there was no comparison with other strategies nor experiments in the real Web.

Boldi *et al.* used simulation on subsets of the Web of 40 million pages from the .it domain and 100 million pages from the WebBase crawl, testing breadth-first against depth-first, random

ordering and an omniscient strategy. The comparison was based on how well PageRank computed on a partial crawl approximates the true PageRank value. Some visits that accumulate PageRank very quickly (most notably, breadth-first and the omniscient visit) provide very poor progressive approximations.^{[14][15]}

Baeza-Yates *et al.* used simulation on two subsets of the Web of 3 million pages from the .gr and .cl domain, testing several crawling strategies.^[16] They showed that both the OPIC strategy and a strategy that uses the length of the per-site queues are better than breadth-first crawling, and that it is also very effective to use a previous crawl, when it is available, to guide the current one.

Daneshpajouh *et al.* designed a community based algorithm for discovering good seeds.^[17] Their method crawls web pages with high PageRank from different communities in less iteration in comparison with crawl starting from random seeds. One can extract good seed from a previously-crawled-Web graph using this new method. Using these seeds, a new crawl can be very effective.

Restricting followed links

[\[edit\]](#)

A crawler may only want to seek out HTML pages and avoid all other MIME types. In order to request only HTML resources, a crawler may make an HTTP HEAD request to determine a Web resource's MIME type before requesting the entire resource with a GET request. To avoid making numerous HEAD requests, a crawler may examine the URL and only request a resource if the URL ends with certain characters such as .html, .htm, .asp, .aspx, .php, .jsp, .jspx or a slash. This strategy may cause numerous HTML Web resources to be unintentionally skipped.

Some crawlers may also avoid requesting any resources that have a "?" in them (are dynamically produced) in order to avoid spider traps that may cause the crawler to download an infinite number of URLs from a Web site. This strategy is unreliable if the site uses URL rewriting to simplify its URLs.

URL normalization

[\[edit\]](#)

Main article: [URL normalization](#)

Crawlers usually perform some type of URL normalization in order to avoid crawling the same resource more than once. The term *URL normalization*, also called *URL canonicalization*, refers to the process of modifying and standardizing a URL in a consistent manner. There are several types of normalization that may be performed including conversion of URLs to

lowercase, removal of "." and ".." segments, and adding trailing slashes to the non-empty path component.[18]

Path-ascending crawling

[edit]

Some crawlers intend to download/upload as many resources as possible from a particular web site. So *path-ascending crawler* was introduced that would ascend to every path in each URL that it intends to crawl.[19] For example, when given a seed URL of `http://lama.org/hamster/monkey/page.html`, it will attempt to crawl `/hamster/monkey/`, `/hamster/`, and `/`. Cothey found that a path-ascending crawler was very effective in finding isolated resources, or resources for which no inbound link would have been found in regular crawling.

Focused crawling

[edit]

Main article: [Focused crawler](#)

The importance of a page for a crawler can also be expressed as a function of the similarity of a page to a given query. Web crawlers that attempt to download pages that are similar to each other are called **focused crawler** or **topical crawlers**. The concepts of topical and focused crawling were first introduced by [Filippo Menczer](#)[20][21] and by Soumen Chakrabarti *et al.*[22]

The main problem in focused crawling is that in the context of a Web crawler, we would like to be able to predict the similarity of the text of a given page to the query before actually downloading the page. A possible predictor is the anchor text of links; this was the approach taken by Pinkerton[23] in the first web crawler of the early days of the Web. Diligenti *et al.*[24] propose using the complete content of the pages already visited to infer the similarity between the driving query and the pages that have not been visited yet. The performance of a focused crawling depends mostly on the richness of links in the specific topic being searched, and a focused crawling usually relies on a general Web search engine for providing starting points.

Academic focused crawler

[edit]

An example of the [focused crawlers](#) are academic crawlers, which crawls free-access academic related documents, such as the *citeseerxbot*, which is the crawler of [CiteSeer](#)^X search engine. Other academic search engines are [Google Scholar](#) and [Microsoft Academic](#)

Search etc. Because most academic papers are published in **PDF** formats, such kind of crawler is particularly interested in crawling PDF, **PostScript** files, **Microsoft Word** including their **zipped** formats. Because of this, general open-source crawlers, such as **Heritrix**, must be customized to filter out other **MIME types**, or a **middleware** is used to extract these documents out and import them to the focused crawl database and repository.[25] Identifying whether these documents are academic or not is challenging and can add a significant overhead to the crawling process, so this is performed as a post crawling process using **machine learning** or **regular expression** algorithms. These academic documents are usually obtained from home pages of faculties and students or from publication page of research institutes. Because academic documents make up only a small fraction of all web pages, a good seed selection is important in boosting the efficiencies of these web crawlers.[26] Other academic crawlers may download plain text and **HTML** files, that contains **metadata** of academic papers, such as titles, papers, and abstracts. This increases the overall number of papers, but a significant fraction may not provide free PDF downloads.

Semantic focused crawler

[edit]

Another type of focused crawlers is semantic focused crawler, which makes use of **domain ontologies** to represent topical maps and link Web pages with relevant ontological concepts for the selection and categorization purposes.[27] In addition, ontologies can be automatically updated in the crawling process. Dong et al.[28] introduced such an ontology-learning-based crawler using a **support-vector machine** to update the content of ontological concepts when crawling Web pages.

Re-visit policy

[edit]

The Web has a very dynamic nature, and crawling a fraction of the Web can take weeks or months. By the time a Web crawler has finished its crawl, many events could have happened, including creations, updates, and deletions.

From the search engine's point of view, there is a cost associated with not detecting an event, and thus having an outdated copy of a resource. The most-used cost functions are freshness and age.[29]

Freshness: This is a binary measure that indicates whether the local copy is accurate or not. The freshness of a page p in the repository at time t is defined as:

$$F_p(t) = \begin{cases} 1 & \text{if } p \text{ is equal to the local copy at time } t \end{cases}$$

Image not found or type unknown

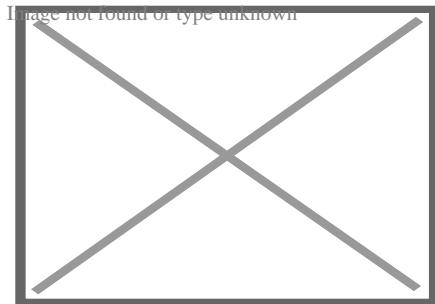
Age: This is a measure that indicates how outdated the local copy is. The age of a page p in the repository, at time t is defined as:

$$A_p(t) = \begin{cases} 0 & \text{if } p \text{ is not modified at time } t \\ t - \text{last modified time} & \text{otherwise} \end{cases}$$

Image not found or type unknown

Coffman et al. worked with a definition of the objective of a Web crawler that is equivalent to freshness, but use a different wording: they propose that a crawler must minimize the fraction of time pages remain outdated. They also noted that the problem of Web crawling can be modeled as a multiple-queue, single-server polling system, on which the Web crawler is the server and the Web sites are the queues. Page modifications are the arrival of the customers, and switch-over times are the interval between page accesses to a single Web site. Under this model, mean waiting time for a customer in the polling system is equivalent to the average age for the Web crawler.[\[30\]](#)

The objective of the crawler is to keep the average freshness of pages in its collection as high as possible, or to keep the average age of pages as low as possible. These objectives are not equivalent: in the first case, the crawler is just concerned with how many pages are outdated, while in the second case, the crawler is concerned with how old the local copies of pages are.



Evolution of Freshness and Age in a web crawler

Two simple re-visiting policies were studied by Cho and Garcia-Molina:[\[31\]](#)

- Uniform policy: This involves re-visiting all pages in the collection with the same frequency, regardless of their rates of change.
- Proportional policy: This involves re-visiting more often the pages that change more frequently. The visiting frequency is directly proportional to the (estimated) change frequency.

In both cases, the repeated crawling order of pages can be done either in a random or a fixed order.

Cho and Garcia-Molina proved the surprising result that, in terms of average freshness, the uniform policy outperforms the proportional policy in both a simulated Web and a real Web crawl. Intuitively, the reasoning is that, as web crawlers have a limit to how many pages they can crawl in a given time frame, (1) they will allocate too many new crawls to rapidly changing pages at the expense of less frequently updating pages, and (2) the freshness of rapidly changing pages lasts for shorter period than that of less frequently changing pages. In other words, a proportional policy allocates more resources to crawling frequently updating pages, but experiences less overall freshness time from them.

To improve freshness, the crawler should penalize the elements that change too often.[32] The optimal re-visiting policy is neither the uniform policy nor the proportional policy. The optimal method for keeping average freshness high includes ignoring the pages that change too often, and the optimal for keeping average age low is to use access frequencies that monotonically (and sub-linearly) increase with the rate of change of each page. In both cases, the optimal is closer to the uniform policy than to the proportional policy: as *Coffman et al.* note, "in order to minimize the expected obsolescence time, the accesses to any particular page should be kept as evenly spaced as possible".[30] Explicit formulas for the re-visit policy are not attainable in general, but they are obtained numerically, as they depend on the distribution of page changes. Cho and Garcia-Molina show that the exponential distribution is a good fit for describing page changes,[32] while *Ipeirotis et al.* show how to use statistical tools to discover parameters that affect this distribution.[33] The re-visiting policies considered here regard all pages as homogeneous in terms of quality ("all pages on the Web are worth the same"), something that is not a realistic scenario, so further information about the Web page quality should be included to achieve a better crawling policy.

Politeness policy

[edit]

Crawlers can retrieve data much quicker and in greater depth than human searchers, so they can have a crippling impact on the performance of a site. If a single crawler is performing multiple requests per second and/or downloading large files, a server can have a hard time keeping up with requests from multiple crawlers.

As noted by Koster, the use of Web crawlers is useful for a number of tasks, but comes with a price for the general community.[34] The costs of using Web crawlers include:

- network resources, as crawlers require considerable bandwidth and operate with a high degree of parallelism during a long period of time;
- server overload, especially if the frequency of accesses to a given server is too high;
- poorly written crawlers, which can crash servers or routers, or which download pages they cannot handle; and
- personal crawlers that, if deployed by too many users, can disrupt networks and Web servers.

A partial solution to these problems is the [robots exclusion protocol](#), also known as the robots.txt protocol that is a standard for administrators to indicate which parts of their Web servers should not be accessed by crawlers.[35] This standard does not include a suggestion for the interval of visits to the same server, even though this interval is the most effective way of avoiding server overload. Recently commercial search engines like [Google](#), [Ask Jeeves](#), [MSN](#) and [Yahoo! Search](#) are able to use an extra "Crawl-delay:" parameter in the [robots.txt](#) file to indicate the number of seconds to delay between requests.

The first proposed interval between successive pageloads was 60 seconds.[36] However, if pages were downloaded at this rate from a website with more than 100,000 pages over a perfect connection with zero latency and infinite bandwidth, it would take more than 2 months to download only that entire Web site; also, only a fraction of the resources from that Web server would be used.

Cho uses 10 seconds as an interval for accesses,[31] and the WIRE crawler uses 15 seconds as the default.[37] The MercatorWeb crawler follows an adaptive politeness policy: if it took t seconds to download a document from a given server, the crawler waits for $10t$ seconds before downloading the next page.[38] Dill *et al.* use 1 second.[39]

For those using Web crawlers for research purposes, a more detailed cost-benefit analysis is needed and ethical considerations should be taken into account when deciding where to crawl and how fast to crawl.[40]

Anecdotal evidence from access logs shows that access intervals from known crawlers vary between 20 seconds and 3–4 minutes. It is worth noticing that even when being very polite, and taking all the safeguards to avoid overloading Web servers, some complaints from Web server administrators are received. [Sergey Brin](#) and [Larry Page](#) noted in 1998, "... running a crawler which connects to more than half a million servers ... generates a fair amount of e-mail and phone calls. Because of the vast number of people coming on line, there are always those who do not know what a crawler is, because this is the first one they have seen." [41]

Parallelization policy

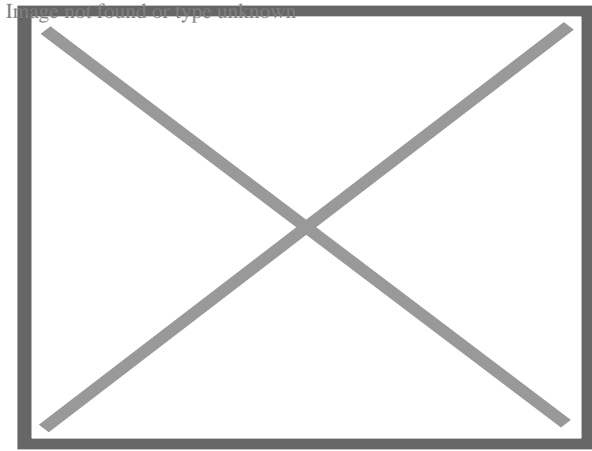
[[edit](#)]

Main article: [Distributed web crawling](#)

A [parallel](#) crawler is a crawler that runs multiple processes in parallel. The goal is to maximize the download rate while minimizing the overhead from parallelization and to avoid repeated downloads of the same page. To avoid downloading the same page more than once, the crawling system requires a policy for assigning the new URLs discovered during the crawling process, as the same URL can be found by two different crawling processes.

Architectures

[\[edit\]](#)



High-level architecture of a standard Web crawler

A crawler must not only have a good crawling strategy, as noted in the previous sections, but it should also have a highly optimized architecture.

Shkapenyuk and Suel noted that:[\[42\]](#)

While it is fairly easy to build a slow crawler that downloads a few pages per second for a short period of time, building a high-performance system that can download hundreds of millions of pages over several weeks presents a number of challenges in system design, I/O and network efficiency, and robustness and manageability.

Web crawlers are a central part of search engines, and details on their algorithms and architecture are kept as business secrets. When crawler designs are published, there is often an important lack of detail that prevents others from reproducing the work. There are also emerging concerns about "[search engine spamming](#)", which prevent major search engines from publishing their ranking algorithms.

Security

[\[edit\]](#)

While most of the website owners are keen to have their pages indexed as broadly as possible to have strong presence in [search engines](#), web crawling can also have [unintended consequences](#) and lead to a [compromise](#) or [data breach](#) if a search engine indexes resources that should not be publicly available, or pages revealing potentially vulnerable versions of software.

Main article: [Google hacking](#)

Apart from standard [web application security](#) recommendations website owners can reduce their exposure to opportunistic hacking by only allowing search engines to index the public parts of their websites (with [robots.txt](#)) and explicitly blocking them from indexing transactional parts (login pages, private pages, etc.).

Crawler identification

[\[edit\]](#)

Web crawlers typically identify themselves to a Web server by using the [User-agent](#) field of an [HTTP](#) request. Web site administrators typically examine their [Web servers'](#) log and use the user agent field to determine which crawlers have visited the web server and how often. The user agent field may include a [URL](#) where the Web site administrator may find out more information about the crawler. Examining Web server log is tedious task, and therefore some administrators use tools to identify, track and verify Web crawlers. [Spambots](#) and other malicious Web crawlers are unlikely to place identifying information in the user agent field, or they may mask their identity as a browser or other well-known crawler.

Web site administrators prefer Web crawlers to identify themselves so that they can contact the owner if needed. In some cases, crawlers may be accidentally trapped in a [crawler trap](#) or they may be overloading a Web server with requests, and the owner needs to stop the crawler. Identification is also useful for administrators that are interested in knowing when they may expect their Web pages to be indexed by a particular [search engine](#).

Crawling the deep web

[\[edit\]](#)

A vast amount of web pages lie in the [deep or invisible web](#).[\[43\]](#) These pages are typically only accessible by submitting queries to a database, and regular crawlers are unable to find these pages if there are no links that point to them. Google's [Sitemaps](#) protocol and [mod oai](#)[\[44\]](#) are intended to allow discovery of these [deep-Web](#) resources.

Deep web crawling also multiplies the number of web links to be crawled. Some crawlers only take some of the URLs in `` form. In some cases, such as the [Googlebot](#), Web crawling is done on all text contained inside the hypertext content, tags, or text.

Strategic approaches may be taken to target deep Web content. With a technique called [screen scraping](#), specialized software may be customized to automatically and repeatedly query a given Web form with the intention of aggregating the resulting data. Such software can be used to span multiple Web forms across multiple Websites. Data extracted from the results of one Web form submission can be taken and applied as input to another Web form thus establishing continuity across the Deep Web in a way not possible with traditional web crawlers.[\[45\]](#)

Pages built on **AJAX** are among those causing problems to web crawlers. **Google** has proposed a format of AJAX calls that their bot can recognize and index.^[46]

Visual vs programmatic crawlers

[\[edit\]](#)

There are a number of "visual web scraper/crawler" products available on the web which will crawl pages and structure data into columns and rows based on the users requirements. One of the main difference between a classic and a visual crawler is the level of programming ability required to set up a crawler. The latest generation of "visual scrapers" remove the majority of the programming skill needed to be able to program and start a crawl to scrape web data.

The visual scraping/crawling method relies on the user "teaching" a piece of crawler technology, which then follows patterns in semi-structured data sources. The dominant method for teaching a visual crawler is by highlighting data in a browser and training columns and rows. While the technology is not new, for example it was the basis of Needlebase which has been bought by Google (as part of a larger acquisition of ITA Labs^[47]), there is continued growth and investment in this area by investors and end-users.^{*[citation needed]*}

List of web crawlers

[\[edit\]](#)

Further information: [List of search engine software](#)

The following is a list of published crawler architectures for general-purpose crawlers (excluding focused web crawlers), with a brief description that includes the names given to the different components and outstanding features:

Historical web crawlers

[\[edit\]](#)

- **WolfBot** was a massively multi threaded crawler built in 2001 by Mani Singh a Civil Engineering graduate from the University of California at Davis.
- **World Wide Web Worm** was a crawler used to build a simple index of document titles and URLs. The index could be searched by using the **grep Unix** command.
- Yahoo! Slurp was the name of the **Yahoo!** Search crawler until Yahoo! contracted with **Microsoft** to use **Bingbot** instead.

In-house web crawlers

[\[edit\]](#)

- Applebot is **Apple's** web crawler. It supports **Siri** and other products.[48]
- **Bingbot** is the name of Microsoft's **Bing** webcrawler. It replaced **Msnbot**.
- Baiduspider is **Baidu's** web crawler.
- DuckDuckBot is **DuckDuckGo's** web crawler.
- **Googlebot** is described in some detail, but the reference is only about an early version of its architecture, which was written in C++ and **Python**. The crawler was integrated with the indexing process, because text parsing was done for full-text indexing and also for URL extraction. There is a URL server that sends lists of URLs to be fetched by several crawling processes. During parsing, the URLs found were passed to a URL server that checked if the URL have been previously seen. If not, the URL was added to the queue of the URL server.
- **WebCrawler** was used to build the first publicly available full-text index of a subset of the Web. It was based on **lib-WWW** to download pages, and another program to parse and order URLs for breadth-first exploration of the Web graph. It also included a real-time crawler that followed links based on the similarity of the anchor text with the provided query.
- **WebFountain** is a distributed, modular crawler similar to Mercator but written in C++.
- **Xenon** is a web crawler used by government tax authorities to detect fraud.[49][50]

Commercial web crawlers

[edit]

The following web crawlers are available, for a price::

- **Diffbot** - programmatic general web crawler, available as an **API**
- **SortSite** - crawler for analyzing websites, available for **Windows** and **Mac OS**
- Swiftbot - **Swifttype's** web crawler, available as **software as a service**
- Aleph Search - web crawler allowing massive collection with high scalability

Open-source crawlers

[edit]

- **Apache Nutch** is a highly extensible and scalable web crawler written in Java and released under an **Apache License**. It is based on **Apache Hadoop** and can be used with **Apache Solr** or **Elasticsearch**.
- **Grub** was an open source distributed search crawler that **Wikia Search** used to crawl the web.
- **Heritrix** is the **Internet Archive's** archival-quality crawler, designed for archiving periodic snapshots of a large portion of the Web. It was written in **Java**.
- **ht://Dig** includes a Web crawler in its indexing engine.

- **HTTrack** uses a Web crawler to create a mirror of a web site for off-line viewing. It is written in **C** and released under the GPL.
- Norconex Web Crawler is a highly extensible Web Crawler written in **Java** and released under an **Apache License**. It can be used with many repositories such as **Apache Solr**, **Elasticsearch**, **Microsoft Azure Cognitive Search**, **Amazon CloudSearch** and more.
- **mnoGoSearch** is a crawler, indexer and a search engine written in C and licensed under the GPL (*NIX machines only)
- **Open Search Server** is a search engine and web crawler software release under the GPL.
- **Scrapy**, an open source webcrawler framework, written in python (licensed under **BSD**).
- **Seeks**, a free distributed search engine (licensed under **AGPL**).
- **StormCrawler**, a collection of resources for building low-latency, scalable web crawlers on **Apache Storm** (Apache License).
- **tkWWW Robot**, a crawler based on the **tkWWW** web browser (licensed under GPL).
- **GNU Wget** is a **command-line**-operated crawler written in **C** and released under the **GPL**. It is typically used to mirror Web and FTP sites.
- **YaCy**, a free distributed search engine, built on principles of peer-to-peer networks (licensed under GPL).

See also

[[edit](#)]

- [Automatic indexing](#)
- [Gnutella crawler](#)
- [Web archiving](#)
- [Webgraph](#)
- [Website mirroring software](#)
- [Search Engine Scraping](#)
- [Web scraping](#)

References

[[edit](#)]

1. [^] *"Web Crawlers: Browsing the Web". Archived from [the original](#) on 6 December 2021.*
2. [^] Spetka, Scott. *"The TkWWW Robot: Beyond Browsing". NCSA. Archived from [the original](#) on 3 September 2004. Retrieved 21 November 2010.*
3. [^] Kobayashi, M. & Takeda, K. (2000). "Information retrieval on the web". *ACM Computing Surveys*. **32** (2): 144–173. *CiteSeerX* [10.1.1.126.6094](#). *doi*:[10.1145/358923.358934](#). *S2CID* [3710903](#).
4. [^] See [definition of scutter on FOAF Project's wiki](#) Archived 13 December 2009 at the [Wayback Machine](#)
5. [^] Masanès, Julien (15 February 2007). *Web Archiving*. Springer. p. 1. *ISBN* [978-3-54046332-0](#). Retrieved 24 April 2014.

6. ^ Edwards, J.; McCurley, K. S.; and Tomlin, J. A. (2001). "An adaptive model for optimizing performance of an incremental web crawler". *Proceedings of the 10th international conference on World Wide Web*. pp. 106–113. *CiteSeerX* 10.1.1.1018.1506. doi:10.1145/371920.371960. ISBN 978-1581133486. S2CID 10316730. Archived from the original on 25 June 2014. Retrieved 25 January 2007.{{cite book}}: CS1 maint: multiple names: authors list (link)
7. ^ Castillo, Carlos (2004). *Effective Web Crawling* (PhD thesis). University of Chile. Retrieved 3 August 2010.
8. ^ Gulls, A.; A. Signori (2005). "The indexable web is more than 11.5 billion pages". *Special interest tracks and posters of the 14th international conference on World Wide Web*. ACM Press. pp. 902–903. doi:10.1145/1062745.1062789.
9. ^ Lawrence, Steve; C. Lee Giles (8 July 1999). "Accessibility of information on the web". *Nature*. **400** (6740): 107–9. Bibcode:1999Natur.400..107L. doi:10.1038/21987. PMID 10428673. S2CID 4347646.
10. ^ Cho, J.; Garcia-Molina, H.; Page, L. (April 1998). "Efficient Crawling Through URL Ordering". *Seventh International World-Wide Web Conference*. Brisbane, Australia. doi:10.1142/3725. ISBN 978-981-02-3400-3. Retrieved 23 March 2009.
11. ^ Cho, Junghoo, "Crawling the Web: Discovery and Maintenance of a Large-Scale Web Data", PhD dissertation, Department of Computer Science, Stanford University, November 2001.
12. ^ Najork, Marc and Janet L. Wiener. "Breadth-first crawling yields high-quality pages". Archived 24 December 2017 at the Wayback Machine In: *Proceedings of the Tenth Conference on World Wide Web*, pages 114–118, Hong Kong, May 2001. Elsevier Science.
13. ^ Abiteboul, Serge; Mihai Preda; Gregory Cobena (2003). "Adaptive on-line page importance computation". *Proceedings of the 12th international conference on World Wide Web*. Budapest, Hungary: ACM. pp. 280–290. doi:10.1145/775152.775192. ISBN 1-58113-680-3. Retrieved 22 March 2009.
14. ^ Boldi, Paolo; Bruno Codenotti; Massimo Santini; Sebastiano Vigna (2004). "UbiCrawler: a scalable fully distributed Web crawler" (PDF). *Software: Practice and Experience*. **34** (8): 711–726. *CiteSeerX* 10.1.1.2.5538. doi:10.1002/spe.587. S2CID 325714. Archived from the original (PDF) on 20 March 2009. Retrieved 23 March 2009.
15. ^ Boldi, Paolo; Massimo Santini; Sebastiano Vigna (2004). "Do Your Worst to Make the Best: Paradoxical Effects in PageRank Incremental Computations" (PDF). *Algorithms and Models for the Web-Graph*. *Lecture Notes in Computer Science*. Vol. 3243. pp. 168–180. doi:10.1007/978-3-540-30216-2_14. ISBN 978-3-540-23427-2. Archived from the original (PDF) on 1 October 2005. Retrieved 23 March 2009.
16. ^ Baeza-Yates, R.; Castillo, C.; Marin, M. and Rodriguez, A. (2005). "Crawling a Country: Better Strategies than Breadth-First for Web Page Ordering." In: *Proceedings of the Industrial and Practical Experience track of the 14th conference on World Wide Web*, pages 864–872, Chiba, Japan. ACM Press.
17. ^ Shervin Daneshpajouh, Mojtaba Mohammadi Nasiri, Mohammad Ghodsi, A Fast Community Based Algorithm for Generating Crawler Seeds Set. In: *Proceedings of 4th International Conference on Web Information Systems and Technologies (Webist-2008)*,

Funchal, Portugal, May 2008.

18. ^ Pant, Gautam; Srinivasan, Padmini; Menczer, Filippo (2004). "[Crawling the Web](#)" (PDF). In Levene, Mark; [Poulovassilis, Alexandra](#) (eds.). *Web Dynamics: Adapting to Change in Content, Size, Topology and Use*. Springer. pp. 153–178. [ISBN 978-3-540-40676-1](#). Archived from [the original](#) (PDF) on 20 March 2009. Retrieved 9 May 2006.
19. ^ Cothey, Viv (2004). "[Web-crawling reliability](#)" (PDF). *Journal of the American Society for Information Science and Technology*. **55** (14): 1228–1238. [CiteSeerX 10.1.1.117.185](#). doi:[10.1002/asi.20078](#).
20. ^ Menczer, F. (1997). [ARACHNID: Adaptive Retrieval Agents Choosing Heuristic Neighborhoods for Information Discovery](#) Archived 21 December 2012 at the [Wayback Machine](#). In D. Fisher, ed., *Machine Learning: Proceedings of the 14th International Conference (ICML97)*. Morgan Kaufmann
21. ^ Menczer, F. and Belew, R.K. (1998). [Adaptive Information Agents in Distributed Textual Environments](#) Archived 21 December 2012 at the [Wayback Machine](#). In K. Sycara and M. Wooldridge (eds.) *Proc. 2nd Intl. Conf. on Autonomous Agents (Agents '98)*. ACM Press
22. ^ Chakrabarti, Soumen; Van Den Berg, Martin; Dom, Byron (1999). "[Focused crawling: A new approach to topic-specific Web resource discovery](#)" (PDF). *Computer Networks*. **31** (11–16): 1623–1640. doi:[10.1016/s1389-1286\(99\)00052-3](#). Archived from [the original](#) (PDF) on 17 March 2004.
23. ^ Pinkerton, B. (1994). [Finding what people want: Experiences with the WebCrawler](#). In *Proceedings of the First World Wide Web Conference, Geneva, Switzerland*.
24. ^ Diligenti, M., Coetzee, F., Lawrence, S., Giles, C. L., and Gori, M. (2000). [Focused crawling using context graphs](#). In *Proceedings of 26th International Conference on Very Large Databases (VLDB)*, pages 527-534, Cairo, Egypt.
25. ^ Wu, Jian; Teregowda, Pradeep; Khabsa, Madian; Carman, Stephen; Jordan, Douglas; San Pedro Wandelmer, Jose; Lu, Xin; Mitra, Prasenjit; Giles, C. Lee (2012). "Web crawler middleware for search engine digital libraries". *Proceedings of the twelfth international workshop on Web information and data management - WIDM '12*. p. 57. doi:[10.1145/2389936.2389949](#). [ISBN 9781450317207](#). [S2CID 18513666](#).
26. ^ Wu, Jian; Teregowda, Pradeep; Ramírez, Juan Pablo Fernández; Mitra, Prasenjit; Zheng, Shuyi; Giles, C. Lee (2012). "The evolution of a crawling strategy for an academic document search engine". *Proceedings of the 3rd Annual ACM Web Science Conference on - Web Sci '12*. pp. 340–343. doi:[10.1145/2380718.2380762](#). [ISBN 9781450312288](#). [S2CID 16718130](#).
27. ^ Dong, Hai; Hussain, Farookh Khadeer; Chang, Elizabeth (2009). "[State of the Art in Semantic Focused Crawlers](#)". *Computational Science and Its Applications – ICCSA 2009. Lecture Notes in Computer Science*. Vol. 5593. pp. 910–924. doi:[10.1007/978-3-642-02457-3_74](#). hdl:[20.500.11937/48288](#). [ISBN 978-3-642-02456-6](#).
28. ^ Dong, Hai; Hussain, Farookh Khadeer (2013). "[SOF: A semi-supervised ontology-learning-based focused crawler](#)". *Concurrency and Computation: Practice and Experience*. **25** (12): 1755–1770. doi:[10.1002/cpe.2980](#). [S2CID 205690364](#).
29. ^ Junghoo Cho; Hector Garcia-Molina (2000). "[Synchronizing a database to improve freshness](#)" (PDF). *Proceedings of the 2000 ACM SIGMOD international conference on Management of data*. Dallas, Texas, United States: ACM. pp. 117–128. doi:

10.1145/342009.335391. ISBN 1-58113-217-4. Retrieved 23 March 2009.

30. ^ **a b** E. G. Coffman Jr; Zhen Liu; Richard R. Weber (1998). "Optimal robot scheduling for Web search engines". *Journal of Scheduling*. **1** (1): 15–29. *CiteSeerX* 10.1.1.36.6087. doi: 10.1002/(SICI)1099-1425(199806)1:1<15::AID-JOS3>3.0.CO;2-K.
31. ^ **a b** Cho, Junghoo; Garcia-Molina, Hector (2003). "Effective page refresh policies for Web crawlers". *ACM Transactions on Database Systems*. **28** (4): 390–426. doi: 10.1145/958942.958945. S2CID 147958.
32. ^ **a b** Junghoo Cho; Hector Garcia-Molina (2003). "Estimating frequency of change". *ACM Transactions on Internet Technology*. **3** (3): 256–290. *CiteSeerX* 10.1.1.59.5877. doi: 10.1145/857166.857170. S2CID 9362566.
33. ^ Ipeirotis, P., Ntoulas, A., Cho, J., Gravano, L. (2005) **Modeling and managing content changes in text databases** Archived 5 September 2005 at the **Wayback Machine**. In Proceedings of the 21st IEEE International Conference on Data Engineering, pages 606-617, April 2005, Tokyo.
34. ^ Koster, M. (1995). Robots in the web: threat or treat? *ConneXions*, 9(4).
35. ^ Koster, M. (1996). **A standard for robot exclusion** Archived 7 November 2007 at the **Wayback Machine**.
36. ^ Koster, M. (1993). **Guidelines for robots writers** Archived 22 April 2005 at the **Wayback Machine**.
37. ^ Baeza-Yates, R. and Castillo, C. (2002). **Balancing volume, quality and freshness in Web crawling**. In *Soft Computing Systems – Design, Management and Applications*, pages 565–572, Santiago, Chile. IOS Press Amsterdam.
38. ^ Heydon, Allan; Najork, Marc (26 June 1999). "**Mercator: A Scalable, Extensible Web Crawler**" (PDF). Archived from *the original* (PDF) on 19 February 2006. Retrieved 22 March 2009. {{cite journal}}: Cite journal requires |journal= (help)
39. ^ Dill, S.; Kumar, R.; Mccurley, K. S.; Rajagopalan, S.; Sivakumar, D.; Tomkins, A. (2002). "**Self-similarity in the web**" (PDF). *ACM Transactions on Internet Technology*. **2** (3): 205–223. doi:10.1145/572326.572328. S2CID 6416041.
40. ^ M. Thelwall; D. Stuart (2006). "**Web crawling ethics revisited: Cost, privacy and denial of service**". *Journal of the American Society for Information Science and Technology*. **57** (13): 1771–1779. doi:10.1002/asi.20388.
41. ^ Brin, Sergey; Page, Lawrence (1998). "**The anatomy of a large-scale hypertextual Web search engine**". *Computer Networks and ISDN Systems*. **30** (1–7): 107–117. doi: 10.1016/s0169-7552(98)00110-x. S2CID 7587743.
42. ^ Shkapenyuk, V. and Suel, T. (2002). **Design and implementation of a high performance distributed web crawler**. In *Proceedings of the 18th International Conference on Data Engineering (ICDE)*, pages 357-368, San Jose, California. IEEE CS Press.
43. ^ Shestakov, Denis (2008). **Search Interfaces on the Web: Querying and Characterizing** Archived 6 July 2014 at the **Wayback Machine**. TUCS Doctoral Dissertations 104, University of Turku
44. ^ Michael L Nelson; Herbert Van de Sompel; Xiaoming Liu; Terry L Harrison; Nathan McFarland (24 March 2005). "mod_oai: An Apache Module for Metadata Harvesting": cs/0503069. *arXiv:cs/0503069*. Bibcode:2005cs.....3069N. {{cite journal}}: Cite journal requires |journal= (help)

45. ^ Shestakov, Denis; Bhowmick, Sourav S.; Lim, Ee-Peng (2005). *"DEQUE: Querying the Deep Web"* (PDF). *Data & Knowledge Engineering*. **52** (3): 273–311. doi:10.1016/s0169-023x(04)00107-7.
46. ^ *"AJAX crawling: Guide for webmasters and developers"*. Retrieved 17 March 2013.
47. ^ ITA Labs *"ITA Labs Acquisition"* Archived 18 March 2014 at the Wayback Machine 20 April 2011 1:28 AM
48. ^ *"About Applebot"*. Apple Inc. Retrieved 18 October 2021.
49. ^ Norton, Quinn (25 January 2007). *"Tax takers send in the spiders"*. Business. *Wired*. Archived from the original on 22 December 2016. Retrieved 13 October 2017.
50. ^ *"Xenon web crawling initiative: privacy impact assessment (PIA) summary"*. Ottawa: Government of Canada. 11 April 2017. Archived from the original on 25 September 2017. Retrieved 13 October 2017.

Further reading

[edit]

- Cho, Junghoo, *"Web Crawling Project"*, UCLA Computer Science Department.
- *A History of Search Engines*, from Wiley
- WIVET is a benchmarking project by OWASP, which aims to measure if a web crawler can identify all the hyperlinks in a target website.
- Shestakov, Denis, *"Current Challenges in Web Crawling"* and *"Intelligent Web Crawling"*, slides for tutorials given at ICWE'13 and WI-IAT'13.
- **v**
- **t**
- **e**

Internet search

Types

- Web search engine (List)
- Metasearch engine
- Multimedia search
- Collaborative search engine
- Cross-language search
- Local search
- Vertical search
- Social search
- Image search
- Audio search
- Video search engine
- Enterprise search
- Semantic search
- Natural language search engine
- Voice search

Tools

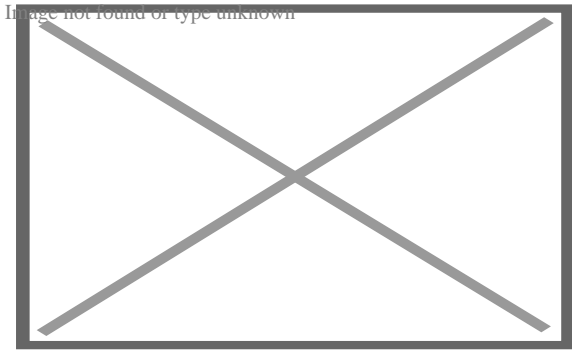
- Cross-language information retrieval
- Search by sound
- Search engine marketing
- Search engine optimization
- Evaluation measures
- Search oriented architecture
- Selection-based search
- Document retrieval
- Text mining
- Web crawler
- Multisearch
- Federated search
- Search aggregator
- Index/Web indexing
- Focused crawler
- Spider trap
- Robots exclusion standard
- Distributed web crawling
- Web archiving
- Website mirroring software
- Web query
- Web query classification

Protocols and standards	<ul style="list-style-type: none"> ○ Z39.50 ○ Search/Retrieve Web Service ○ Search/Retrieve via URL ○ OpenSearch ○ Representational State Transfer ○ Wide area information server
See also	<ul style="list-style-type: none"> ○ Search engine ○ Desktop search ○ Online search
<ul style="list-style-type: none"> ○ v ○ t ○ e 	
Web crawlers	
Internet bots designed for Web crawling and Web indexing	
Active	<ul style="list-style-type: none"> ○ 80legs ○ bingbot ○ Crawljax ○ Fetcher ○ Googlebot ○ Heritrix ○ HTTrack ○ PowerMapper ○ Wget
Discontinued	<ul style="list-style-type: none"> ○ FAST Crawler ○ msnbot ○ RBSE ○ TkWWW robot ○ Twiceler
Types	<ul style="list-style-type: none"> ○ Distributed web crawler ○ Focused crawler

Image not found or type unknown

About Parramatta

This article is about the Australian metropolis. For the local government area, see **City of Parramatta**. For the rugby league club, see **Parramatta Eels**. For other uses, see **Parramatta (disambiguation)**.



Parramatta viewed from the south in 2022

Map

Image not found or type unknown

Coordinates	<div><div><div>33°49′S 151°00′E<div><div></div><div>33°49′S 151°00′E</div></div></div><div><div></div></div></div><div><div><div><div><div></div><div>33°49′S 151°00′E</div></div></div><div><div></div><div></div></div></div><div><div><div><div><div></div><div>33°49′S 151°00′E</div></div></div><div><div></div><div></div></div></div></div></div><div><div><div><div><div></div><div>33°49′S 151°00′E</div></div></div><div><div></div><div></div></div></div></div></div> <div><div><div><div><div></div><div>33°49′S 151°00′E</div></div></div><div><div></div><div></div></div></div></div> <div><div><div><div><div></div><div>33°49′S 151°00′E</div></div></div><div><div></div><div></div></div></div></div> <div><div><div><div><div></div><div>33°49′S 151°00′E</div></div></div><div><div></div><div></div></div></div></div> <div><div><div><div><div></div><div>33°49′S 151°00′E</div></div></div><div><div></div><div></div></div></div></div> <div><div><div><div><div></div><div>33°49′S 151°00′E</div></div></div><div><div></div><div></div></div></div></div> <div><div><div><div><div></div><div>33°49′S 151°00′E</div></div></div><div><div></div><div></div></div></div></div> <div><div><div><div><div></div><div>33°49′S 151°00′E</div></div></div><div><div></div><div></div></div></div></div> <div><div><div><div><div></div><div>33°49′S 151°00′E</div></div></div><div><div></div><div></div></div></div></div> <div><div><div><div><div></div><div>33°49′S 151°00′E</div></div></div><div><div></div><div></div></div></div></div> <div><div><div><div><div></div><div>33°49′S 151°00′E</div></div></div><div><div></div><div></div></div></div></div> <div><div><div><div><div></div><div>33°49′S 151°00′E</div></div></div><div><div></div><div></div></div></div></div> <div><div><div><div><div></div><div>33°49′S 151°00′E</div></div></div><div><div></div><div></div></div></div></div> <div><div><div><div><div></div><div>33°49′S 151°00′E</div></div></div><div><div></div><div></div></div></div></div> <div><div><div><div><div></div><div>33°49′S 151°00′E</div></div></div><div><div></div><div></div></div></div></div> <div><div><div><div><div></div><div>33°49′S 151°00′E</div></div></div><div><div></div><div></div></div></div></div> <div><div><div><div><div></div><div>33°49′S 151°00′E</div></div></div><div><div></div><div></div></div></div></div> <div><div><div><div><div></div><div>33°49′S 151°00′E</div></div></div><div><div></div><div></div></div></div></div> <div><div><div><div><div></div><div>33°49′S 151°00′E</div></div></div><div><div></div><div></div></div></div></div> <div><div><div><div><div></div><div>33°49′S 151°00′E</div></div></div><div><div></div><div></div></div></div></div> <div><div><div><div><div></div><div>33°49′S 151°00′E</div></div></div><div><div></div><div></div></div></div></div> <div><div><div><div><div></div><div>33°49′S 151°00′E</div></div></div><div><div></div><div></div></div></div></div> <div><div><div><div><div></div><div>33°49′S 151°00′E</div></div></div><div><div></div><div></div></div></div></div> <div><div><div><div><div></div><div>33°49′S 151°00′E</div></div></div><div><div></div><div></div></div></div></div> <div><div><div><div><div></div><div>33°49′S 151°00′E</div></div></div><div><div></div><div></div></div></div></div> <div><div><div><div><div></div><div>33°49′S 151°00′E</div></div></div><div><div></div><div></div></div></div></div> <div><div><div><div><div></div><div>33°49′S 151°00′E</div></div></div><div><div></div><div></div></div></div></div> <div><div><div><div><div></div><div>33°49′S 151°00′E</div></div></div><div><div></div><div></div></div></div></div> <div><div><div><div><div></div><div>33°49′S 151°00′E</div></div></div><div><div></div><div></div></div></div></div> <div><div><div><div><div></div><div>33°49′S 151°00′E</div></div></div><div><div></div><div></div></div></div></div> <div><div><div><div><div></div><div>33°49′S 151°00′E</div></div></div><div><div></div><div></div></div></div></div> <div><div><div><div><div></div><div>33°49′S 151°00′E</div></div></div><div><div></div><div></div></div></div></div> <div><div><div><div><div></div><div>33°49′S 151°00′E</div></div></div><div><div></div><div></div></div></div></div> <div><div><div><div><div></div><div>33°49′S 151°00′E</div></div></div><div><div></div><div></div></div></div></div> <div><div><div><div><div></div><div>33°49′S 151°00′E</div></div></div><div><div></div><div></div></div></div></div> <div><div><div><div><div></div><div>33°49′S 151°00′E</div></div></div><div><div></div><div></div></div></div></div> <div><div><div><div><div></div><div>33°49′S 151°00′E</div></div></div><div><div></div><div></div></div></div></div> <div><div><div><div><div></div><div>33°49′S 151°00′E</div></div></div><div><div></div><div></div></div></div></div> <div><div><div><div><div></div><div>33°49′S 151°00′E</div></div></div><div><div></div><div></div></div></div></div> <div><div><div><div><div></div><div>33°49′S 151°00′E</div></div></div><div><div></div><div></div></div></div></div>
--------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Parramatta (/

$$\tilde{A}f\tilde{A}'\tilde{A} \in \mathcal{M} \tilde{A}f\tilde{A} \in \tilde{A}c\tilde{A}, -\tilde{A}c\tilde{A}f\tilde{A} \in \tilde{A}c\tilde{A}, -\tilde{A}f\tilde{A}c\tilde{A} \in \tilde{A}c\tilde{A} \in \tilde{A}c\tilde{A}f\tilde{A} \in \mathcal{M} \tilde{A}f\tilde{A}c\tilde{A} \in \tilde{A}c\tilde{A}, \tilde{A}f\tilde{A}$$

pær

ÆfÆ'Ātâ€™Āfâ€Ācâ,-â„cĀfÆ'Ācâ,-Ā ĀfĀcĀcâ€šĀ-Ācâ€žĀcĀfÆ'Ātâ€™ĀfĀcĀcâ€šĀ-Ā,Ā ĀfÆ'Ātâ€™Āfâ€Ācâ,-â„cĀfÆ'Ācâ,-Ā ĀfĀcĀcâ€šĀ-Ācâ€žĀcĀfÆ'Ātâ€™ĀfĀcĀcâ€šĀ-Ā,Ā Āf

mæt

ÆfÆ'Ātâ€™Āfâ€Ācâ,-â„cĀfÆ'Ācâ,-Ā ĀfĀcĀcâ€šĀ-Ācâ€žĀcĀfÆ'Ātâ€™ĀfĀcĀcâ€šĀ-Ā,Ā Āf

/; Dharuk: *Burramatta*) is a suburb and major commercial centre in Greater Western Sydney.[7]

[8] Parramatta is located approximately 24 kilometres (15 mi) west of the Sydney CBD, on the banks of the Parramatta River.[2] It is commonly regarded as the secondary central business district of metropolitan Sydney.

Parramatta is the municipal seat of the local government area of the City of Parramatta and is often regarded as one of the primary centres of the Greater Sydney metropolitan region, along with the Sydney CBD, Penrith, Campbelltown, and Liverpool.[9] Parramatta also has a long history as a second administrative centre in the Sydney metropolitan region, playing host to a number of government departments,[10] as well as state and federal courts. It is often colloquially referred to as "Parra".

Parramatta, which was founded as a British settlement in 1788, the same year as Sydney, is the oldest inland European settlement in Australia and serves as the economic centre of Greater Western Sydney.[11] Since 2000, state government agencies such as the New South Wales Police Force and Sydney Water[12] have relocated to Parramatta from Central Sydney. The 151st meridian east runs directly through the suburb.

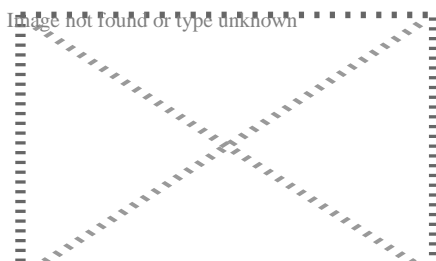
History

[edit]

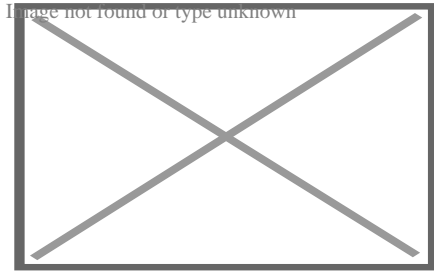
Aboriginal

[edit]

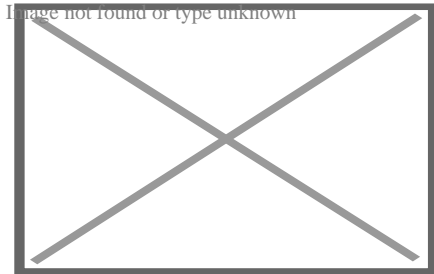
Radiocarbon dating suggests human activity occurred in Parramatta from around 30,000 years ago.[13] The Darug people who lived in the area before European settlement regarded the area as rich in food from the river and forests. They named the area Baramada or Burramatta ('Parramatta') which means Eel ("Burra") Place ("matta"), with the resident Indigenous people being called the Burramattagal. Similar Darug words include Cabramatta (Grub place) and Wianamatta (Mother place).[14] Other references[which?] are derived from the words of Captain Watkin Tench, a white British man with a poor understanding of the Darug language, and are incorrect.[citation needed] To this day many eels and other sea creatures are attracted to nutrients that are concentrated where the saltwater of Port Jackson meets the freshwater of the Parramatta River. The Parramatta Eels rugby league club chose their symbol as a result of this phenomenon.



View of Parramatta in 1812



Parramatta from May's Hill by Joseph Lycett (c. 1824)



Parramatta in 1886

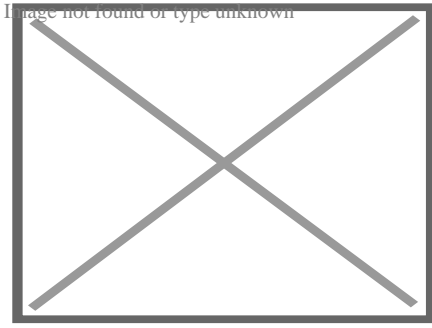
British colonisation

[[edit](#)]

Parramatta was colonised by the British in 1788, the same year as Sydney. As such, Parramatta is the second oldest city in Australia, being only 10 months younger than Sydney. The British colonists, who had arrived in January 1788 on the **First Fleet** at **Sydney Cove**, had only enough food to support themselves for a short time and the soil around Sydney Cove proved too poor to grow the amount of food that 1,000 **convicts**, soldiers and administrators needed to survive. During 1788, Governor **Arthur Phillip** had reconnoitred several places before choosing Parramatta as the most likely place for a successful large farm.^[15] Parramatta was the **furthest navigable point inland** on the Parramatta River (i.e. furthest from the thin, sandy coastal soil) and also the point at which the river became freshwater and therefore useful for farming.

On Sunday 2 November 1788, Governor Phillip took a detachment of marines along with a surveyor and, in boats, made his way upriver to a location that he called The Crescent, a defensible hill curved round a river bend, now in **Parramatta Park**. The Burramattagal were rapidly displaced with notable residents Maugoran, **Boorong** and Baludarri being forced from their lands.^[16]

As a settlement developed, Governor Phillip gave it the name "Rose Hill" after British politician **George Rose**.^[17] On 4 June 1791 Phillip changed the name of the township to Parramatta, approximating the term used by the local Aboriginal people.^[18] A neighbouring suburb acquired the name "Rose Hill", which today is spelt "**Rosehill**".



The former **Female Orphan School** was one of the first schools in the area

In an attempt to deal with the food crisis, Phillip in 1789 granted a convict named **James Ruse** the land of **Experiment Farm** at Parramatta on the condition that he develop a viable agriculture. There, Ruse became the first European to successfully grow grain in Australia. The Parramatta area was also the site of the pioneering of the Australian wool industry by **John Macarthur's Elizabeth Farm** in the 1790s. **Philip Gidley King's** account of his visit to Parramatta on 9 April 1790 is one of the earliest descriptions of the area. Walking four miles with Governor Phillip to Prospect, he saw undulating grassland interspersed with magnificent trees and a great number of **kangaroos** and **emus**.^[19]

The **Battle of Parramatta**, a major battle of the **Australian frontier wars**, occurred in March 1797 where **Eora** leader **Pemulwuy** led a group of **Bidjigal** warriors, estimated to be at least 100, in an attack on the town of Parramatta. The local garrison withdrew to their barracks and Pemulwuy held the town until he was eventually shot and wounded. A year later, a government farm at **Toongabbie** was attacked by Pemulwuy, who challenged the **New South Wales Corps** to a fight.^{[20][21]}

Governor Arthur Phillip built a small house for himself on the hill of The Crescent. In 1799 this was replaced by a larger residence which, substantially improved by Governor **Lachlan Macquarie** from 1815 to 1818, has survived to the present day, making it the oldest surviving Government House anywhere in Australia. It was used as a retreat by Governors until the 1850s, with one Governor (**Governor Brisbane**) making it his principal home for a short period in the 1820s.

In 1803, another famous incident occurred in Parramatta, involving a convicted criminal named **Joseph Samuel**, originally from England. Samuel was convicted of murder and sentenced to death by hanging, but the rope broke. In the second attempt, the noose slipped off his neck. In the third attempt, the new rope broke. Governor King was summoned and pardoned Samuel, as the incident appeared to him to be **divine intervention**.^[22]

In 1814, Macquarie opened a school for Aboriginal children at Parramatta as part of a policy of improving relations between Aboriginal and European communities. This school was later relocated to "**Black Town**".^[23]

Parramatta was gazetted as a city on 19 November 1976, and later, a suburb on 10 June 1994.

The first significant skyscrapers began to emerge in Parramatta in the late 1990s and the suburb transformed into a major business and residential hub in the early 2000s. Since then, the suburb's growth has accelerated in the past decade.

On 20 December 2024, the first stage of the Parramatta Light Rail was completed.

Climate

[edit]

Further information: [Climate of Sydney](#)

Parramatta has a [humid subtropical climate](#) ([Köppen climate classification](#): *Cfa*) with mild to cool, somewhat short winters and warm to usually hot summers, alongside moderate rainfall spread throughout the year.

Summer maximum temperatures are quite variable, often reaching above 35 °C (95 °F), on average 13.1 days in the summer season, and sometimes remaining in the low 20s, especially after a [cold front](#) or a [sea breeze](#), such as the [southerly buster](#). Northwesterlies can occasionally bring hot winds from the [desert](#) that can raise temperatures higher than 40 °C (104 °F) mostly from November to February, and sometimes above 44 °C (111 °F) in January severe heatwaves. The record highest temperature (since 1967) was 47.0 °C (116.6 °F) on 4 January 2020. Parramatta is warmer than [Sydney CBD](#) in the summer due to the [urban heat island effect](#) and its inland location. In extreme cases though, it can be 5–10 °C (9–18 °F) warmer than Sydney, especially when sea breezes do not penetrate inland on hot summer and spring days. For example, on 28 November 2009, the city reached 29.3 °C (84.7 °F),^[24] while Parramatta reached 39.0 °C (102.2 °F),^[25] almost 10 °C (18 °F) higher. In the summer, Parramatta, among other places in western Sydney, can often be the hottest place in the world because of the [Blue Mountains](#) trapping hot air in the region, in addition to the UHI effect.^[26]

Rainfall is slightly higher during the first three months of the year because the anticlockwise-rotating [subtropical high](#) is to the south of the country, thereby allowing moist easterlies from the [Tasman Sea](#) to penetrate the city.^{[27][28]} The second half of the year tends to be drier (late winter/spring) since the [subtropical high](#) is to the north of the city, thus permitting dry westerlies from the interior to dominate.^[29] Drier winters are also owed to its position on the [leeward](#) side of the [Great Dividing Range](#), which [block](#) westerly cold fronts (that are more common in late winter) and thus would become [foehn winds](#), whereby allowing decent amount of sunny days and relatively low precipitation in that period.^[30] Thunderstorms are common in the months from early spring to early autumn, occasionally quite severe thunderstorms can occur. Snow is virtually unknown, having been recorded only in 1836 and 1896^[31] Parramatta gets 106.6 days of clear skies annually.

Depending on the [wind direction](#), summer weather may be [humid](#) or [dry](#), though the humidity is mostly in the comfortable range, with the late summer/autumn period having a higher average humidity than late winter/early spring.

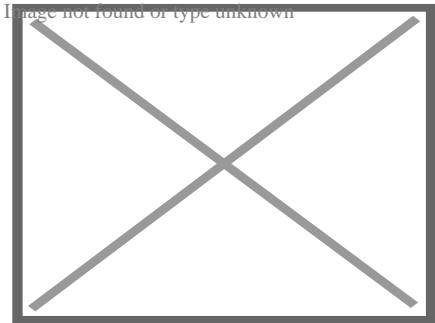
Climate data for Parramatta North (1991–2020 averages, 1967–present extremes)

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Record high °C (°F)	47.0 (116.6)	44.5 (112.1)	40.5 (104.9)	37.0 (98.6)	29.2 (84.6)	25.5 (77.9)	26.8 (80.2)	30.6 (87.1)	36.5 (97.7)	40.1 (104.2)	42.7 (108.9)	44.0 (111.2)	44.0 (111.2)
Mean maximum °C (°F)	40.1 (104.2)	37.5 (99.5)	33.9 (93.0)	30.3 (86.5)	26.2 (79.2)	22.3 (72.1)	22.7 (72.9)	25.7 (78.3)	30.8 (87.4)	34.3 (93.7)	36.6 (97.9)	37.6 (99.7)	37.6 (99.7)
Mean daily maximum °C (°F)	29.1 (84.4)	28.3 (82.9)	26.5 (79.7)	23.9 (75.0)	20.9 (69.6)	18.2 (64.8)	17.8 (64.0)	19.5 (67.1)	22.3 (72.1)	24.5 (76.1)	25.8 (78.4)	27.7 (81.9)	27.7 (81.9)
Mean daily minimum °C (°F)	17.9 (64.2)	17.7 (63.9)	15.9 (60.6)	12.6 (54.7)	9.6 (49.3)	7.5 (45.5)	6.3 (43.3)	6.9 (44.4)	9.4 (48.9)	12.0 (53.6)	14.3 (57.7)	16.4 (61.5)	16.4 (61.5)
Mean minimum °C (°F)	12.9 (55.2)	12.7 (54.9)	10.9 (51.6)	7.8 (46.0)	4.5 (40.1)	2.9 (37.2)	1.7 (35.1)	2.4 (36.3)	4.5 (40.1)	6.5 (43.7)	8.6 (47.5)	10.9 (51.6)	10.9 (51.6)
Record low °C (°F)	10.1 (50.2)	9.2 (48.6)	6.8 (44.2)	4.0 (39.2)	1.4 (34.5)	0.8 (33.4)	−1.0 (30.2)	0.7 (33.3)	0.7 (33.3)	3.6 (38.5)	4.0 (39.2)	7.7 (45.9)	7.7 (45.9)
Average precipitation mm (inches)	89.9 (3.54)	130.3 (5.13)	99.1 (3.90)	78.3 (3.08)	61.3 (2.41)	99.0 (3.90)	48.0 (1.89)	47.4 (1.87)	48.5 (1.91)	61.3 (2.41)	82.0 (3.23)	78.5 (3.09)	99.1 (3.90)
Average precipitation days (≥ 1 mm)	8.6	9.0	9.9	7.0	6.3	7.9	6.0	4.8	5.7	7.0	8.7	8.3	8.3
Average afternoon relative humidity (%)	56	59	58	56	59	58	55	45	46	50	54	55	55
Average dew point °C (°F)	16.2 (61.2)	16.8 (62.2)	15.5 (59.9)	12.7 (54.9)	9.9 (49.8)	7.6 (45.7)	5.6 (42.1)	5.5 (41.9)	7.7 (45.9)	9.9 (49.8)	12.3 (54.1)	14.3 (57.7)	14.3 (57.7)

Source: [Bureau of Meteorology](#)^[32]

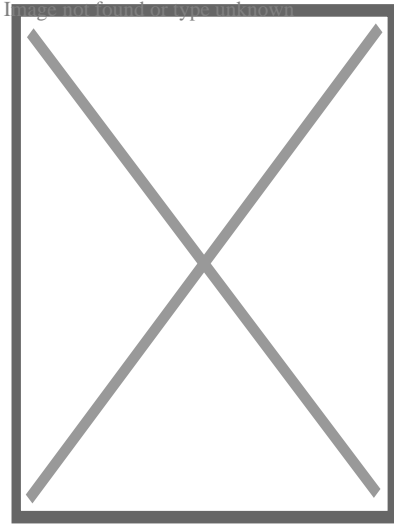
Commercial area

[\[edit\]](#)



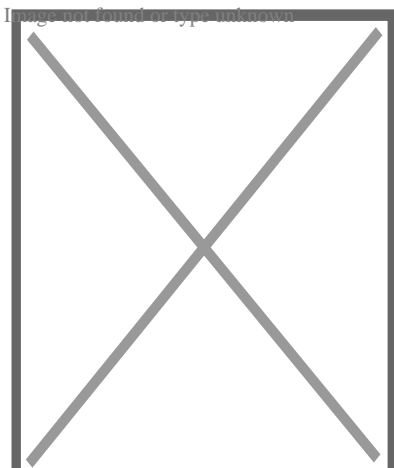
Church Street

Church Street is home to many shops and restaurants. The northern end of Church Street, close to **Lennox Bridge**, features *al fresco* dining with a diverse range of cuisines. Immediately south of the CBD Church Street is known across Sydney as 'Auto Alley' for the many car dealerships lining both sides of the street as far as the M4 Motorway.[33]



6 & 8 Parramatta Square, Parramatta's tallest building

Since 2000, Parramatta has seen the consolidation of its role as a government centre, with the relocation of agencies such as the **New South Wales Police Force** Headquarters and the Sydney Water Corporation[12] from **Sydney CBD**. At the same time, major construction work occurred around the **railway station** with the expansion of Westfield Shoppingtown and the creation of a new transport interchange. The western part of the Parramatta CBD is known as the **Parramatta Justice Precinct** and houses the corporate headquarters of the **Department of Communities and Justice**. Other legal offices include the **Children's Court of New South Wales** and the Sydney West Trial Courts, **Legal Aid Commission of NSW**, Office of Trustee and Guardian (formerly the Office of the Protective Commissioner), NSW Registry of Births, Deaths and Marriages, and the **Office of the Director of Public Prosecutions**. Nearby on Marsden Street is the **Parramatta Courthouse** and the **Drug Court of New South Wales**. The Garfield Barwick Commonwealth Law Courts Building (named in honour of **Sir Garfield Barwick**), houses courts of the **Federal Magistrates Court** and the **Family Court of Australia**. The NSW Government has also announced plans to secure up to 45,000 m² of new A-grade leased office space in Parramatta to relocate a further 4,000 workers from the Sydney CBD.[34]



Eclipse Tower

Parramatta Square (previously known as Civic Place) is a civic precinct located in the heart of the city, adjacent to Parramatta Town Hall. The Parramatta Square construction works included a redevelopment of the Parramatta Civic Centre, construction of a new culture and arts centre, and the construction of a new plaza. The designs of the first two projects, a 65-storey residential skyscraper and an office building were announced on 20 July 2012.[35] Concerns from **CASA** about infringements into controlled airspace from the height of the residential tower resulted in 8 Parramatta Square being turned into a 55-story commercial building, rather than the originally proposed 65-storey residential tower.[36] Parramatta Square became home to 3,000 **National Australia Bank** employees, relocated from the Sydney CBD.[37] Other notable commercial tenants who have established a presence at Parramatta Square include **Westpac**, **Endeavour Energy**, **KPMG** and **Deloitte**. [38]

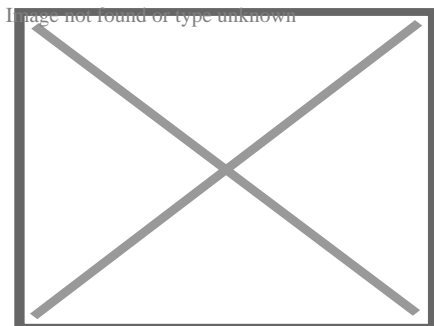
Centenary Square, formerly known as Centenary Plaza, was created in 1975 when the then **Parramatta City Council** closed a section of the main street to traffic to create a pedestrian plaza. It features an 1888 Centennial Memorial Fountain and adjoins the 1883 Parramatta Town Hall and **St John's Cathedral**. [39]

A hospital known as The Colonial Hospital was established in Parramatta in 1818.[40] This then became Parramatta District Hospital. Jeffery House was built in the 1940s. With the construction of the nearby **Westmead Hospital** complex public hospital services in Parramatta were reduced but after refurbishment Jeffery House again provides clinical health services. Nearby, Brislington House has had a long history with health services. It is the oldest colonial building in Parramatta, dating to 1821.[41] It became a doctors residence before being incorporated into the Parramatta Hospital in 1949.

Parramatta is a major business and commercial centre, and home to **Westfield Parramatta**, the **tenth largest shopping centre in Australia**. [42] Parramatta is also the major transport hub for Western Sydney, servicing trains and buses, as well as having a ferry wharf and future light rail and metro services. Major upgrades have occurred around Parramatta railway station with the creation of a new transport interchange, and the ongoing development of the Parramatta Square local government precinct. [43]

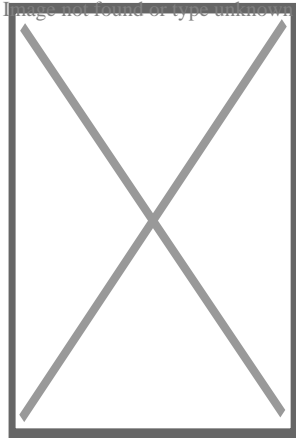
Places of worship

[edit]

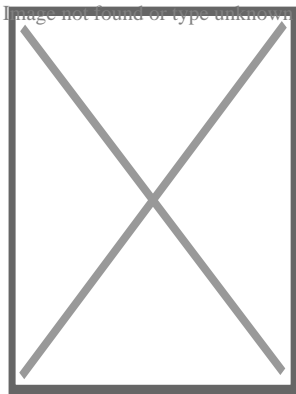


St John's Cathedral was completed in 1802

Church Street takes its name from St John's Cathedral (Anglican), which was built in 1802 and is the oldest church in Parramatta. While the present building is not the first on the site, the towers were built during the time of Governor Macquarie, and were based on those of the church at Reculver, England, at the suggestion of his wife, Elizabeth.[44] The historic St John's Cemetery is located nearby on O'Connell Street.[45]



St Patrick's Cathedral



Congregational Church (1871)

St Patrick's Cathedral (Roman Catholic) is one of the oldest Catholic churches in Australia. Construction commenced in 1836, but it wasn't officially complete until 1837. In 1854 a new church was commissioned, although the tower was not completed until 1880, with the spire following in 1883.[46] It was built on the site to meet the needs of a growing congregation. It was destroyed by fire in 1996, with only the stone walls remaining.

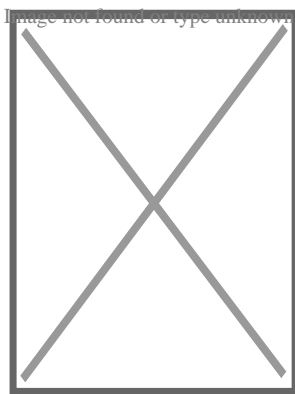
On 29 November 2003, the new St Patrick's Cathedral was dedicated.[47] The historic St Patrick's Cemetery is located in North Parramatta. The Uniting Church is represented by Leigh Memorial Church.[48] Parramatta Salvation Army is one of the oldest active Salvation Army Corps in Australia. Parramatta is also home to the Parramatta and Districts Synagogue, which services the Jewish community of western Sydney.[49]

The **Greek Orthodox** Parish and Community of **St Ioannis** (St John The Frontrunner) Greek Orthodox Church was established in Parramatta in May 1960 under the ecumenical jurisdiction of the **Greek Orthodox Archdiocese of Australia** to serve the predominantly emigrating Greek population of Greater Western Sydney. Originally, the liturgies were held in the hall of St John's Ambulance Brigade in Harris Park until the completion of the church in December 1966 located in Hassall Street Parramatta. The parish sold this property in 2014 and is now located at the corner of George and Purchase Streets.[50] The Parish Community of St Ioannis continues to serve over 5,000 Greek parishioners.[51]

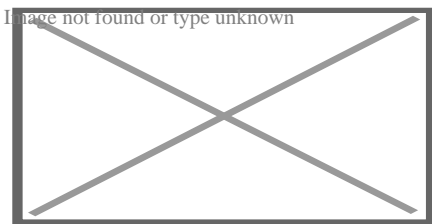
A **Buddhist** temple is located in Cowper Street, Parramatta.[52] Parramatta's **Mosque** is in an apartment building on Marsden Street, Parramatta.[53] The district is served by **BAPS Swaminarayan Hindu temple** located on Eleanor St, Rosehill,[54] and a **Murugan** Hindu temple in **Mays Hill**, off Great Western Highway.[55]

Parks

[edit]



Victorian Gazebo at the **Prince Alfred Square**



The **Old Government House** is a major site of significance in **Parramatta Park**

Parramatta Park is a large park adjacent to **Western Sydney Stadium** that is a popular venue for walking, jogging and bike riding. It was formerly the Governor's Domain, being land set aside for the Governor to supply his farming needs, until it was gazetted as a public park in 1858.[56] As the Governor's Domain, the grounds were considerably larger than the current 85 hectare Parramatta Park, extending from Parramatta Road in the south as evident by a small gatehouse adjacent to Parramatta High School. For a time Parramatta Park housed a zoo[57] until 1951 when the animals were transferred to **Taronga Zoo**.

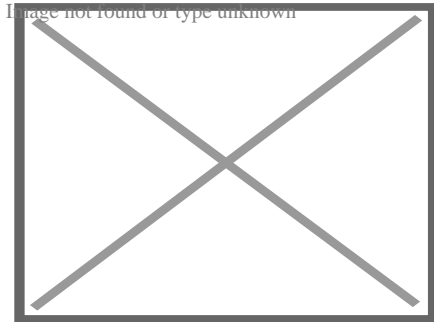
Parramatta is known as the 'River City' as the **Parramatta River** flows through the Parramatta CBD.[58] Its foreshore features a playground, seating, picnic tables and pathways that are increasingly popular with residents, visitors and CBD workers.[59]

Prince Alfred Square is a **Victorian era** park located within the CBD on the northern side of the **Parramatta River**. It is one of the oldest public parks in **New South Wales** with trees dating from c. 1869. Prior to being a public park, it was the site of Parramatta's second gaol from 1804 until 1841 and the first female factory in Australia between 1804 and 1821.

Transport

[edit]

In contrast to the high level of **car dependency** throughout Sydney, a greater proportion of Parramatta's workers travelled to work on public transport (45.2%) than by car (36.2%) in 2016.[60]



Parramatta railway station

Rail

[edit]

Heavy rail

[edit]

Parramatta railway station is served by **Sydney Trains'** **Cumberland Line**, **Leppington & Inner West Line** and **North Shore & Western Line** services.[61] **NSW TrainLink** operates intercity services on the **Blue Mountains Line** as well as services to rural New South Wales. The station was originally opened in 1855, located in what is now **Granville**, and known as Parramatta Junction. The station was moved to its current location and opened on 4 July 1860, five years after the first railway line in Sydney was opened, running from Sydney to Parramatta Junction.[62] It was upgraded in the 2000s, with work beginning in late 2003 and the new interchange opening on 19 February 2006.[63]

Light rail

[[edit](#)]

Main article: [Parramatta Light Rail](#)

The light rail [Westmead & Carlingford Line](#) runs from Westmead to [Carlingford](#) via the Parramatta city centre. A future branch will run to [Sydney Olympic Park](#).^[64]

Metro

[[edit](#)]

Main article: [Sydney Metro West](#)

The under construction Sydney Metro West will be a metro line run between the Sydney central business district and Westmead. Announced in 2016,^[65] the line is set to open in 2032 with [a station in Parramatta](#).^[66]

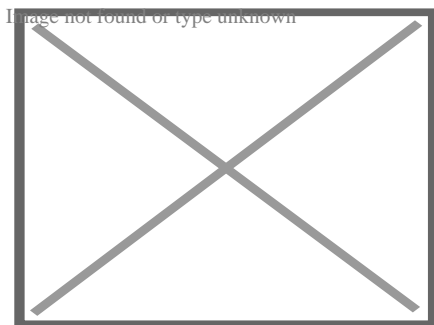
Bus

[[edit](#)]

Parramatta is also serviced by a [major bus interchange](#) located on the south eastern side of the railway station. The interchange is served by buses utilising the [North-West T-way](#) to Rouse Hill and the [Liverpool–Parramatta T-way](#) to Liverpool. Parramatta is also serviced by one high frequency [Metrobus](#) service:

- [M91](#) – Parramatta to Hurstville via Granville, Bankstown and Peakhurst

A free bus Route 900 is operated by [Transit Systems](#) in conjunction with the state government. Route 900 circles Parramatta CBD.^[67] A free bus also links [Western Sydney Stadium](#) to Parramatta railway station during major sporting events.



[Parramatta ferry wharf](#)

Ferry

[edit]

The **Parramatta ferry wharf** is at the Charles Street Weir, which divides the tidal saltwater from the freshwater of the upper river, on the eastern boundary of the Central Business District. The wharf is the westernmost destination of **Sydney Ferries' Parramatta River ferry services**.^[68]

Road

[edit]

Parramatta Road has always been an important thoroughfare for Sydney from its earliest days. From Parramatta the major western road for the state is the **Great Western Highway**. The **M4 Western Motorway**, running parallel to the Great Western Highway has taken much of the traffic away from these roads, with entrance and exit ramps close to Parramatta.

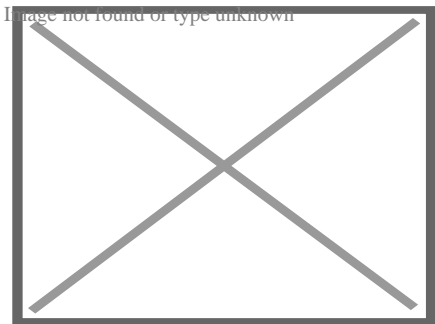
James Ruse Drive serves as a partial ring-road circling around the eastern part of Parramatta to join with the **Cumberland Highway** to the north west of the city.

The main north-south route through Parramatta is Church Street. To the north it becomes **Windsor Road**, and to the south it becomes Woodville Road.

Demographics

[edit]

Historical population



Parramatta Town Hall in 2023

Year	Pop.	±%
2001	17,982	—
2006	18,448	+2.6%
2011	19,745	+7.0%
2016	25,798	+30.7%
2021	30,211	+17.1%

According to the **2016 census** conducted by the **Australian Bureau of Statistics**, the suburb of Parramatta had a population of 30,211. Of these:^[69]

Ethnic diversity

The most common country of birth in Parramatta is **India** representing 30.9% of the population, outnumbering Australian born residents at 24.8%. The next most common are

China 8.9%, Nepal 5.5%, Philippines 2.5% and Iran 1.3%. However, only 6.8% identify their ancestry as Australian; the other common self-identified ancestries were Indian 27.3%, Chinese 15.3%, English 8.5% and Nepali 5.5%. About one quarter (24.4%) of people spoke English at home; other languages spoken at home included Hindi 10.4%, Mandarin 8.8%, Nepali 5.3%, Tamil 5.0% and Telugu 4.3%.

Religion

This question is optional in the Census. Of the people who answered it, the most common response was Hinduism 33.6%; the next most common responses were "No Religion" 21.6%, Catholic 12.1%, Not stated 7.7% and Islam 7.5%.

Age distribution

Parramatta has an over-representation of young adults when compared to the country as a whole. Parramatta residents' median age was 32 years, compared to the national median of 38. Children aged under 15 years made up 16.3% of the population (national average is 18.2%) and people aged 65 years and over made up 6.6% of the population (national average is 17.2%).

Income

The average weekly household income was \$2,092, compared to the national average of \$1,746.

Housing

The majority of dwellings in Parramatta (85.6%) were flats, units or apartments; 7.7% were separate houses, and 5.7% were semi-detached (mostly townhouses). The average household size was 2.4 people. In 2021, 2.2% of households were public housing, compared to 6.3% in 2016.^[70]

Notable residents

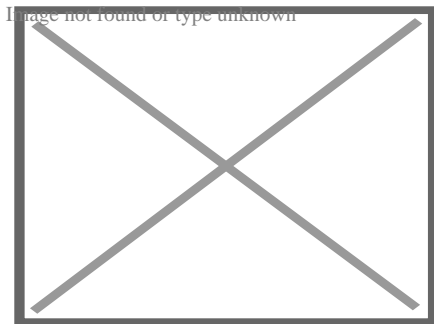
[\[edit\]](#)

- Keith Agget (1931–2017), rugby league player
- Bernie Banton (1946–2007), builder and social justice campaigner
- Richie Benaud (1930–2015), cricketer and commentator
- Allan Cunningham (1791–1839), explorer and botanist
- Greg Dyer (born 1959), cricketer
- Gerry Hazlitt (1888–1915), cricketer
- Paul Hogan (born 1939), comedian and actor
- Harry Hopman (1906–1985), tennis player
- David Lennox (1788–1873), colonial bridge builder
- John Lewin (1770–1819), first professional artist in New South Wales
- Bruce Mann (1926–2007), rugby league player
- George McIver (1859–1945), science fiction writer

- Rev. **Samuel Marsden** (1765–1838), known as the "flogging parson"
- Mary Cover Hassall (1799–1825), Methodist missionary to Tonga Island
- **Dowell Philip O'Reilly** (1865–1923), poet and politician
- **Todd Payten** (born 1979), rugby league player and coach
- "**Jock**" **Ross** (born 1943), outlaw biker.
- **Nora Kate Weston** (1880-1965), artisan
- **J. C. Wharton** (1853–1929), editor of *Parramatta Times* (defunct) and a local history[71]

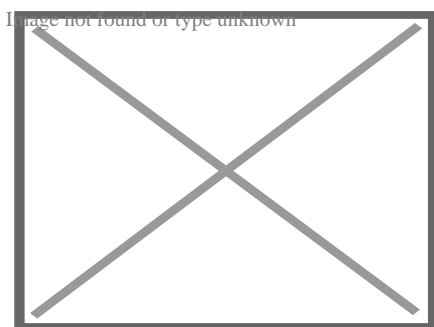
Education

[[edit](#)]



Macarthur Girls High School

Parramatta is home to several primary and secondary schools. **Arthur Phillip High School** was established in 1960 in its own right, in buildings which had been used continuously as a school since 1875 is the oldest continuously operating public school in Parramatta. **Parramatta High School** was the first coeducational school in the Sydney metropolitan area established in 1913. **Our Lady of Mercy College** is one of the oldest Catholic schools in Australia. **Macarthur Girls High School** is successor to an earlier school 'Parramatta Commercial and Household Arts School'. Others schools include Parramatta Public School, Parramatta East Public School, Parramatta West Public School, and St Patrick's Primary Parramatta.



Old King's School

Several **tertiary education** facilities are also located within Parramatta. A **University of New England** study centre and two **Western Sydney University** campuses are situated in Parramatta. The **Western Sydney University Parramatta Campus** consists of two sites: Parramatta South (the primary site) which occupies the site of the historic Female Orphan

School^[72] and Parramatta North (the secondary site) which includes the adjacent Western Sydney University Village Parramatta (formerly **UWS Village** Parramatta) an on campus student village accommodation. Whereby, the flagship Parramatta City Campus Precinct consists of two buildings: the Engineering Innovation Hub located at 6 Hassall Street and the Peter Shergold Building located at 1 Parramatta Square (169 Macquarie Street).^[73] **Alphacrucis** University College is a Christian liberal arts college with a campus in Parramatta located at 30 Cowper Street.^[74] The **University of Sydney** has also announced that it intends to establish a new campus in Parramatta.^[75]

Media

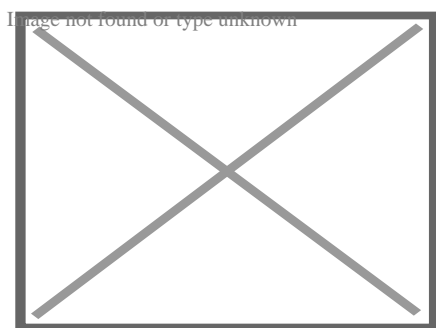
^[edit]

The ***Parramatta Advertiser*** is the local newspaper serving Parramatta and surrounding suburbs.

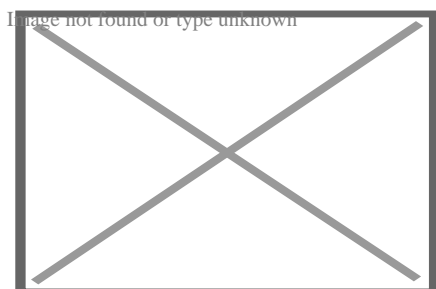
On 16 March 2020, the **Australian Broadcasting Corporation** opened a new Western Sydney **newsroom** in Horwood Place at Parramatta incorporating space for 12 staff and news production equipment with the capacity to broadcast **live radio programs**.^[76] According to the ABC, the opening formed part of its strategic goal to improve its presence in outer metropolitan areas.^[76] Additionally, the ABC announced on 16 June 2021 its intention to relocate approximately 300 employees to Parramatta, which is part of a five-year plan which aims to have 75% of its content makers based away from the network's **Ultimo** headquarters by 2025.^[77]^[78]

Culture and sport

^[edit]



CommBank Stadium



Various events are held on the Parramatta River

As the centre of the [City of Parramatta](#), as well as the centre and second largest business district of Sydney, Parramatta hosts many festivals and events.^[79] [Riverside Theatres](#) is a performing arts centre located on the northern bank of Parramatta River. The city hosts the following events:

- January – [Sydney Festival](#) and Australia Day^[80]
- February – Lunar New Year and [Tropfest](#)^[81]
- April – Anzac Day
- July – Winterlight and Burramatta Day (Naidoc)
- October – Parramasala and Parramatta Lanes^[82]
- November – Loy Krathong, Christmas in Parramatta and Foundation Day
- December – New Year's Eve

Parramatta Park contains Old Government House and thus Parramatta was once the capital of the colony of [New South Wales](#) until Governors returned to residing in Sydney in 1846.^[83] Another feature is the natural amphitheatre located on one of the bends of the river, named by Governor Philip as "the Crescent", which is used to stage concerts. It is home to the [Dairy Cottage](#), built from 1798 to 1805, originally a single-room cottage and is one of the earliest surviving cottages in Australia.

The remains of Governor Brisbane's private astronomical observatory, constructed in 1822, are visible. Astronomers who worked at the observatory, discovering thousands of new stars and [deep sky](#) objects, include [James Dunlop](#) and [Carl Rümker](#). In 1822, the architect S. L. Harris designed the Bath House for Governor Brisbane and built it in 1823. Water was pumped to the building through lead pipes from the river. In 1886, it was converted into a pavilion.^[84]

Cultural events

[\[edit\]](#)

- The [Rosehill Race Course](#) holds various race meets throughout the year, including: Derby Day, Golden Rose Day, and Rosehill Gardens Race Day.
- The Parramatta Farmers Markets^[85] occurs every Friday, and has local produce.

Sporting teams

[\[edit\]](#)

Parramatta is the home of several professional sports teams. These teams include the [Parramatta Eels](#) of the [National Rugby League](#) and [Western Sydney Wanderers](#) of the [A-League](#). Both teams formerly played matches at [Parramatta Stadium](#) that has since been demolished, and replaced with the 30,000-seat [Western Sydney Stadium](#).^[86] Parramatta

Stadium was also home to the now dissolved [Sydney Wave](#) of the former [Australian Baseball League](#) and [Parramatta Power](#) of the former [National Soccer League](#). The newly built Bankwest Stadium opened its gates for the community on 14 April 2019 with free entry for all fans. Located on O'Connell Street, the stadium is in proximity of the Parramatta CBD. The opening sporting event was the 2019 Round 6 NRL clash between Western Sydney rivals the Parramatta Eels and Wests Tigers on Easter Monday 22 April. The Eels won the match by a score of 51–6. It is being predicted that the new stadium will boost Western Sydney economy by contributing millions of dollars to it.^[87]

Entertainment

[\[edit\]](#)

[Duran Duran](#)'s “Union of the Snake” music video with Russell Mulcahy was filmed in 1983 at Parramatta using 35mm film.^[88]

The 2013 superhero film *[The Wolverine](#)* used the intersection of George Street and Smith Street as a filming location to depict Tokyo, Japan.^[89]

Heritage listings

[\[edit\]](#)

Parramatta has a number of heritage-listed sites, including:

- 1 and 3 Barrack Lane: [Warders Cottages](#)^[90]
- 39 Campbell Street: [Lennox House](#)^[91]
- 195 Church Street: [St John's Cathedral](#)^[92]
- 349–351 (adj) Church Street: [Lennox Bridge](#)^[93]
- 353 Church Street: [Prince Alfred Square](#)^[94]
- 541 Church Street: [Oddfellows Arms Inn](#)^[95]
- Fleet Street: [Parramatta Female Factory and Institutions Precinct](#)^[96]^[97]
- 10 George Street: [Brislington](#)^[98]
- 65–69 George Street: [Roxy Theatre](#)^[99]
- 85 George Street: [Perth House](#)^[100]
- 88–92 George Street: [88–92 George Street](#)^[101]
- 182 George Street: [Harrisford](#)^[102]
- Great Western railway: [Parramatta railway station](#)^[103]
- Horwood Place: [Redcoats Mess House](#)^[104]
- Linden House, 2 Smith Street: [New South Wales Lancers Memorial Museum Collection](#)^[105]
- 1 Marist Place: [Murphy House](#)^[106]
- 45 Macquarie Street: [Parramatta Archaeological Site](#)^[107]

- Marsden Street: [Parramatta Hospital Archaeological Site](#)^[108]
- 8 Melville Street: [Macarthur House](#)^[109]
- O'Connell Street: [Old King's School](#)^[110]^[111]
- O'Connell Street: [Old Government House](#)^[112]
- 1 O'Connell Street: [St John's Anglican Cemetery](#)^[113]
- 12, 14, 16 O'Connell Street: [Travellers Rest Inn](#)^[114]
- 25 O'Connell Street: [Avondale](#)^[115]
- 40–42 O'Connell Street: [Roseneath Cottage](#)^[116]
- Corner O'Connell Street and Dunlop Street, North Parramatta: [Parramatta Correctional Centre](#)^[117]
- 54 Sorrell Street: [Endrim](#)^[118]
- 43a Thomas Street: [Broughton House](#)^[119]

See also

[\[edit\]](#)

- [List of tallest buildings in Parramatta](#)
- [Parramatta cloth](#)
- [Story Factory](#)

References

[\[edit\]](#)

- [↑] *Australian Bureau of Statistics* (28 June 2022). *"Parramatta (Suburbs and Localities)". 2021 Census QuickStats*. Retrieved 26 July 2022. Image not found or type unknown Edit this at Wikidata
- [↑] **a b c** *"Parramatta (suburb)". Geographical Names Register (GNR) of NSW. Geographical Names Board of New South Wales*. Retrieved 2 October 2008. Image not found or type unknown Edit this at Wikidata
- [↑] *"Parramatta". New South Wales Electoral Commission*. Retrieved 23 November 2019.
- [↑] *"Baulkham Hills". New South Wales Electoral Commission*. Retrieved 23 November 2019.
- [↑] *"Granville". New South Wales Electoral Commission*. Retrieved 23 November 2019.
- [↑] *"Parramatta". Australian Electoral Commission*. 19 October 2007. Archived from *the original* on 26 February 2009. Retrieved 2 October 2008.
- [↑] *"Parramatta: Suburb Guide. Highlighting new developments in Sydney's second CBD". Urban*. 5 August 2019. Retrieved 5 May 2020.
- [↑] *"Introducing Sydney's second CBD: Skyscrapers of steel and glass set to transform city"*. 7NEWS.com.au. 19 November 2019. Retrieved 5 May 2020.
- [↑] *"Greater Cities Commission Act 2022 No 8". legislation.nsw.gov.au*. 4 November 2022. Retrieved 29 June 2023.
- [↑] *"Government". atparramatta.com*.
- [↑] *"Visitor Strategy for Parramatta 2011–2016" (PDF)*. City of Parramatta. Archived from *the original* (PDF) on 10 March 2016. Retrieved 31 July 2013.

12. ^ [a b "Hitting the ground running – Sydney Water's Parramatta office reaches ground level"](#). sydneywater.com.au. Archived from [the original](#) on 22 July 2008.
13. ^ Macey, Richard (2007). ["Settlers' history rewritten: go back 30,000 years"](#). The Sydney Morning Herald. Retrieved 5 July 2014.
14. ^ ["Daraug Language"](#). darug.org.au. Archived from [the original](#) on 2 May 2013.
15. ^ "Man of Honour – John Macarthur", Michael Duffy, Macmillan 2003, p. 81 ff
16. ^ Smith, Keith Vincent (2005). [Wallumedegal: an Aboriginal History of Ryde](#) (PDF). Ryde: City of Ryde.
17. ^ ["The romance of Australian place names"](#). The Australian Women's Weekly. National Library of Australia. 27 May 1964. p. 59. Retrieved 14 October 2013.
18. ^ E. R. Pretymann (7 July 1970). ["SOME NOTES ON THE LIFE AND TIMES OF CAPTAIN JAMES KELLY"](#) (PDF). Retrieved 15 March 2018.
19. ^ Flynn 1997, p 28
20. ^ Dale, David (16 February 2008). ["WHO WE ARE: The man who nearly changed everything"](#). The Sun Herald. Archived from [the original](#) on 23 June 2012. Retrieved 25 April 2018.
21. ^ J Henniker Heaton, *Australian Dictionary of Dates and Men of the Time*, Sydney, 1873
22. ^ [""HERALD" SATURDAY MAGAZINE"](#). The Sydney Morning Herald. National Library of Australia. 26 September 1953. p. 7. Retrieved 30 June 2014.
23. ^ Norman, Heidi (2015). ["Parramatta and Black Town Native Institutions"](#). Dictionary of Sydney. Dictionary of Sydney Trust. Retrieved 8 February 2016.
24. ^ ["Daily Maximum Temperature – 066062"](#). bom.gov.au. Bureau of Meteorology. Retrieved 3 February 2016.
25. ^ ["Daily Maximum Temperature – 066124"](#). bom.gov.au. Bureau of Meteorology. Retrieved 3 February 2016.
26. ^ ["Which Australian city has the weather that suits you best? Find out with our interactive"](#). The Guardian. 23 May 2023. Retrieved 8 January 2024.
27. ^ [Context statement for the Sydney Basin bioregion – Climate](#) by Bioregional Assessments from the [Australian Government](#). Retrieved 11 April 2021.
28. ^ ["Australia's new seasonal rainfall zones"](#). ABC News. 25 February 2016. Retrieved 11 April 2021.
29. ^ ["The climate of Sydney, Australia"](#). www-das.uwyo.edu.
30. ^ Sharples, J.J., McRae, R.H.D., Weber, R.O., Mills, G.A. (2009) Foehn-like winds and fire danger anomalies in southeastern Australia. Proceedings of the 18th IMACS World Congress and MODSIM09. 13–17 July, Cairns
31. ^ ["NSW NON ALPINE SNOW FALL EVENTS 1808 TO 2017"](#). blackheathweather.com.
32. ^ ["Climate statistics: PARRAMATTA NORTH \(MASONS DRIVE\)"](#). Bureau of Meteorology. Retrieved 19 November 2020.
33. ^ ["Auto Alley"](#). Discover Parramatta.
34. ^ ["Government to expand Parramatta office footprint"](#). Department of Finance, Services and Innovation. NSW Government. Retrieved 9 November 2018.
35. ^ ["Parramatta's urban renewal relaunched"](#). Parramatta Sun. 20 July 2012. Archived from [the original](#) on 30 December 2012. Retrieved 27 July 2012.
36. ^ ["Construction & Architecture News"](#). Architecture & Design. Retrieved 3 May 2024.






37. ^ ["NAB moves 3000 bankers into Parramatta Square"](#). The Daily Telegraph. Retrieved 9 November 2018.
38. ^ ["Commercial Directory for Each Tower – Parramatta Square"](#). www.psq.com.au. Retrieved 3 May 2024.
39. ^ ["About Centenary Square"](#). Parramatta Heritage Centre. City of Parramatta Council. Retrieved 9 November 2018.
40. ^ ["Jeffery House"](#). Archived from [the original](#) on 26 September 2011.
41. ^ ["Brislington House"](#).
42. ^ ["Westfield Parramatta"](#). Westfield Group. 2017. Retrieved 18 December 2017.
43. ^ ["Welcome to Parramatta NSW Australia"](#). cityofparramatta.com. Archived from [the original](#) on 17 May 2014. Retrieved 13 July 2014.
44. ^ ["St John's Anglican Cathedral"](#). Heritage Branch. Archived from [the original](#) on 9 June 2011. Retrieved 15 July 2010. See also [Reculver](#).
45. ^ ["St Johns Cemetery"](#). Discover Parramatta.
46. ^ ["St Patrick's Catholic Cathedral: Parramatta"](#). ohta.org.au. Retrieved 13 July 2014.
47. ^ ["History"](#). St Patrick's Cathedral Parish Parramatta. Archived from [the original](#) on 31 January 2008. Retrieved 11 January 2008.
48. ^ ["Leigh Memorial Church"](#). Parramatta Mission. Retrieved 18 December 2017.
49. ^ ["Parramatta Synagogue"](#). Parramatta Synagogue. Retrieved 18 December 2017.
50. ^ ["Contact Us"](#). Greek Orthodox Parish & Community of "St Ioannis" Parramatta.
51. ^ ["Home"](#). Greek Orthodox Parish & Community of "St Ioannis" Parramatta.
52. ^ ["Nan Tien Temple, Australia"](#). Nan Tien Temple. Archived from [the original](#) on 8 August 2018. Retrieved 30 April 2020.
53. ^ ["Parramatta Mosque"](#). Archived from [the original](#) on 10 August 2011. Retrieved 26 August 2011.
54. ^ ["-- B A P S Swaminarayan Sanstha --"](#). swaminarayan.org.
55. ^ ["Home – Sydney Murugan Temple"](#). sydneymurugan.org.au.
56. ^ ["Celebrating 160 Years"](#). Parramatta Park. Retrieved 9 November 2018.
57. ^ ["Wild things: The history of Parramatta Zoo"](#). 23 October 2017.
58. ^ ["Central River City vision"](#). Greater Sydney Commission. Retrieved 9 November 2018.
59. ^ ["City River Foreshore"](#). City of Parramatta Council. Retrieved 9 November 2018.
60. ^ [Australian Bureau of Statistics](#) (27 June 2017). ["Parramatta \(State Suburb\)"](#). 2016 Census QuickStats. Retrieved 25 October 2018. Image not found or type unknown
61. ^ ["Station Details – Parramatta"](#). Transport for NSW. Retrieved 31 May 2018. [Edit this at Wikidata](#)
62. ^ Bozier, Rolfe. ["New South Wales Railways:Parramatta Railway Station"](#). Retrieved 30 January 2008.
63. ^ ["Parramatta Transport Interchange – opening 19 February"](#). CityRail. 14 February 2006. Archived from [the original](#) on 20 December 2007. Retrieved 30 January 2008.
64. ^ ["Moment in history: Commuters board first Parramatta light rail service"](#). ABC News. 19 December 2024. Retrieved 22 December 2024.
65. ^ ["Sydney Metro West: a new railway, more trains for Western Sydney"](#). Transport for NSW. 14 November 2016.
66. ^ Rose, Tamsin; Visontay, Elias; McLeod, Catie (6 December 2023). ["This article is more than 2 months old Rosehill racecourse could be turned into 25,000 homes in Metro West"](#)

revamp". The Guardian. Retrieved 4 March 2024.

67. ^ *"Transdev NSW route 900"* (PDF). Transdev NSW. Retrieved 3 October 2019.
68. ^ *"F3 Parramatta River ferry timetable"*. Transport for NSW.
69. ^ *Australian Bureau of Statistics* (28 June 2022). *"Parramatta (State Suburb)"*. 2021 Census QuickStats. Retrieved 4 October 2024. Image not found or type unknown
70. ^ *"Crime and Disadvantage in Parramatta"*. Microburbs. Retrieved 14 May 2024. Edit this at Wikidata
71. ^ *The jubilee history of Parramatta in commemoration of the first half-century of municipal government, 1861–1911*, Parramatta T.D. Little and R.S. Richardson, 1911, retrieved 10 June 2016 Available as .pdf-based CD-ROM
72. ^ *"Welcome to the Female Orphan School"*. Western Sydney University. Retrieved 16 November 2024.
73. ^ *"Parramatta City Campus Precinct"*. Western Sydney University. 23 July 2024. Retrieved 16 November 2024.
74. ^ *"Welcome to AC Sydney"*. Alphacrucis University College. Retrieved 16 November 2024.
75. ^ *"Parramatta-Westmead campus proposal takes shape"*. University of Sydney. Retrieved 24 January 2019.
76. ^ **a b** *"New ABC Western Sydney newsroom opens for business"*. About the ABC. Australian Broadcasting Corporation. 13 March 2020. Retrieved 16 June 2021.
77. ^ Samios, Zoe (16 June 2021). *"ABC to relocate 300 Ultimo staff to Parramatta"*. *The Sydney Morning Herald*. Nine Entertainment. Retrieved 16 June 2021.
78. ^ *"ABC announces 300 staff will move from Ultimo headquarters to Parramatta in Western Sydney"*. ABC News. Australian Broadcasting Corporation. 16 June 2021. Retrieved 16 June 2021.
79. ^ *"Parramatta Events – About"*. Discover Parramatta.
80. ^ *"Home"*. Sydney Festival.
81. ^ *"Home"*. Tropfest.
82. ^ *"About Parramasala Festival"*. Parramasala. Retrieved 31 August 2015.
83. ^ *"Old Government House"*. oldgovernmenthouse.com.au. Archived from *the original* on 10 September 2012.
84. ^ *"Plone"*. ppt.nsw.gov.au. Archived from *the original* on 12 February 2014. Retrieved 16 September 2007.
85. ^ *"Parramatta Farmers' Markets"*. TimeOut Sydney.
86. ^ NSW, Infrastructure. *"Infrastructure NSW : Western Sydney Stadium"*. Infrastructure NSW. Retrieved 25 October 2018.
87. ^ *"Sydney Business Chamber: Bankwest Stadium kicks goals for Western Sydney economy"*. Bankwest Stadium.
88. ^ *Duran Duran interview Countdown 1*, 7 February 2011, retrieved 5 March 2024
89. ^ *"Filming Locations for The Wolverine (2013), in New South Wales and Japan"*. The Worldwide Guide to Movie Locations. Retrieved 5 March 2024.
90. ^ *"Warders Cottages"*. *New South Wales State Heritage Register*. Department of Planning & Environment. H00709. Retrieved 18 May 2018. Image not found or type unknown Text is licensed by State of New South Wales (Department of Planning and Environment) under **CC BY 4.0** licence.

91. ^ *"Lennox House". New South Wales State Heritage Register. Department of Planning & Environment. H00751. Retrieved 18 May 2018.*  Text is licensed by State of New South Wales (Department of Planning and Environment) under CC BY 4.0 licence.
92. ^ *"St. John's Anglican Cathedral". New South Wales State Heritage Register. Department of Planning & Environment. H01805. Retrieved 18 May 2018.*  Text is licensed by State of New South Wales (Department of Planning and Environment) under CC BY 4.0 licence.
93. ^ *"Lennox Bridge". New South Wales State Heritage Register. Department of Planning & Environment. H00750. Retrieved 18 May 2018.*  Text is licensed by State of New South Wales (Department of Planning and Environment) under CC BY 4.0 licence.
94. ^ *"Prince Alfred Square and potential archaeological site". New South Wales State Heritage Register. Department of Planning & Environment. H01997. Retrieved 18 May 2018.*  Text is licensed by State of New South Wales (Department of Planning and Environment) under CC BY 4.0 licence.
95. ^ *"Oddfellows Arms Inn". New South Wales State Heritage Register. Department of Planning & Environment. H00276. Retrieved 18 May 2018.*  Text is licensed by State of New South Wales (Department of Planning and Environment) under CC BY 4.0 licence.
96. ^ *"Norma Parker Correctional Centre". New South Wales State Heritage Register. Department of Planning & Environment. H00811. Retrieved 18 May 2018.*  Text is licensed by State of New South Wales (Department of Planning and Environment) under CC BY 4.0 licence.
97. ^ *"Cumberland District Hospital Group". New South Wales State Heritage Register. Department of Planning & Environment. H00820. Retrieved 18 May 2018.*  Text is licensed by State of New South Wales (Department of Planning and Environment) under CC BY 4.0 licence.
98. ^ *"Parramatta District Hospital – Brislington and Landscape". New South Wales State Heritage Register. Department of Planning & Environment. H00059. Retrieved 18 May 2018.*  Text is licensed by State of New South Wales (Department of Planning and Environment) under CC BY 4.0 licence.
99. ^ *"Roxy Theatre". New South Wales State Heritage Register. Department of Planning & Environment. H00711. Retrieved 18 May 2018.*  Text is licensed by State of New South Wales (Department of Planning and Environment) under CC BY 4.0 licence.
100. ^ *"Perth House and Stables". New South Wales State Heritage Register. Department of Planning & Environment. H00155. Retrieved 18 May 2018.*  Text is licensed by State of New South Wales (Department of Planning and Environment) under CC BY 4.0 licence.
101. ^ *"Shop and office". New South Wales State Heritage Register. Department of Planning & Environment. H00278. Retrieved 18 May 2018.*  Text is licensed by State of New South Wales (Department of Planning and Environment) under CC BY 4.0 licence.
102. ^ *"Harrisford". New South Wales State Heritage Register. Department of Planning & Environment. H00248. Retrieved 18 May 2018.*  Text is licensed by State of New South Wales (Department of Planning and Environment) under CC BY 4.0 licence.

103. ^ *"Parramatta Railway Station". New South Wales State Heritage Register. Department of Planning & Environment. H00696. Retrieved 18 May 2018.*  Text is licensed by State of New South Wales (Department of Planning and Environment) under CC BY 4.0 licence.
104. ^ *"Redcoats Mess House". New South Wales State Heritage Register. Department of Planning & Environment. H00218. Retrieved 18 May 2018.*  Text is licensed by State of New South Wales (Department of Planning and Environment) under CC BY 4.0 licence.
105. ^ *"1st/15th Royal NSW Lancers Memorial Museum Collection". New South Wales State Heritage Register. Department of Planning & Environment. H01824. Retrieved 18 May 2018.*  Text is licensed by State of New South Wales (Department of Planning and Environment) under CC BY 4.0 licence.
106. ^ *"Murphys House". New South Wales State Heritage Register. Department of Planning & Environment. H00238. Retrieved 18 May 2018.*  Text is licensed by State of New South Wales (Department of Planning and Environment) under CC BY 4.0 licence.
107. ^ *"Archaeological Site and Associated Artefacts". New South Wales State Heritage Register. Department of Planning & Environment. H02027. Retrieved 18 February 2020.*  Text is licensed by State of New South Wales (Department of Planning and Environment) under CC BY 4.0 licence.
108. ^ *"Parramatta District Hospital – Archaeology". New South Wales State Heritage Register. Department of Planning & Environment. H00828. Retrieved 18 May 2018.*  Text is licensed by State of New South Wales (Department of Planning and Environment) under CC BY 4.0 licence.
109. ^ *"Macarthur House". New South Wales State Heritage Register. Department of Planning & Environment. H00050. Retrieved 18 May 2018.*  Text is licensed by State of New South Wales (Department of Planning and Environment) under CC BY 4.0 licence.
110. ^ *"Marsden Rehabilitation Centre Group". New South Wales State Heritage Register. Department of Planning & Environment. H00826. Retrieved 18 May 2018.*  Text is licensed by State of New South Wales (Department of Planning and Environment) under CC BY 4.0 licence.
111. ^ Marsden Rehabilitation Centre [former King's School] : conservation plan City of Parramatta Library
112. ^ *"Parramatta Park and Old Government House". New South Wales State Heritage Register. Department of Planning & Environment. H00596. Retrieved 18 May 2018.*  Text is licensed by State of New South Wales (Department of Planning and Environment) under CC BY 4.0 licence.
113. ^ *"St. John's Anglican Cemetery". New South Wales State Heritage Register. Department of Planning & Environment. H00049. Retrieved 18 May 2018.*  Text is licensed by State of New South Wales (Department of Planning and Environment) under CC BY 4.0 licence.
114. ^ *"Travellers Rest Inn Group". New South Wales State Heritage Register. Department of Planning & Environment. H00748. Retrieved 18 May 2018.*  Text is licensed by State of New South Wales (Department of Planning and Environment) under CC BY 4.0 licence.

115. ^ *"Avondale". New South Wales State Heritage Register. Department of Planning & Environment. H00239. Retrieved 18 May 2018.*  Text is licensed by State of New South Wales (Department of Planning and Environment) under **CC BY 4.0 licence**.
116. ^ *"Roseneath Cottage". New South Wales State Heritage Register. Department of Planning & Environment. H00042. Retrieved 18 May 2018.*  Text is licensed by State of New South Wales (Department of Planning and Environment) under **CC BY 4.0 licence**.
117. ^ *"Parramatta Correctional Centre". New South Wales State Heritage Register. Department of Planning & Environment. H00812. Retrieved 18 May 2018.*  Text is licensed by State of New South Wales (Department of Planning and Environment) under **CC BY 4.0 licence**.
118. ^ *"Endrim". New South Wales State Heritage Register. Department of Planning & Environment. H00379. Retrieved 18 May 2018.*  Text is licensed by State of New South Wales (Department of Planning and Environment) under **CC BY 4.0 licence**.
119. ^ *"Broughton House". New South Wales State Heritage Register. Department of Planning & Environment. H01302. Retrieved 18 May 2018.*  Text is licensed by State of New South Wales (Department of Planning and Environment) under **CC BY 4.0 licence**.

External links

[edit]



Wikivoyage has a travel guide for **Parramatta**.



Wikimedia Commons has media related to **Parramatta, New South Wales**.



Wikisource has the text of the 1911 *Encyclopædia Britannica* article "**Parramatta**".

- [Parramatta City Council website](#)
- [Parramatta Park website](#)
- [Parramatta & District Historical Society Inc website](#)

Dictionary of Sydney entries

[edit]

- *"Parramatta". Dictionary of Sydney. Retrieved 28 September 2015.* **[CC-BY-SA]**
- *Chris Levins – Parramatta Park Trust (2010). "Parramatta Park". Dictionary of Sydney. Retrieved 28 September 2015.* **[CC-BY-SA]**

- Michaela Ann Cameron (2015). "*Brislington*". *Dictionary of Sydney*. Retrieved 2 October 2015. [CC-By-SA]
- Michaela Ann Cameron (2015). "*The Crescent*". *Dictionary of Sydney*. Retrieved 6 October 2015. [CC-By-SA]
- Michaela Ann Cameron (2015). "*Travellers' Rest Inn Parramatta*". *Dictionary of Sydney*. Dictionary of Sydney Trust. Retrieved 11 October 2015.[CC-By-SA]
- Michaela Ann Cameron (2015). "*Roseneath Cottage*". *Dictionary of Sydney*. Dictionary of Sydney Trust. Retrieved 16 October 2015.[CC-By-SA]

- **v**
- **t**
- **e**

Suburbs and localities within the **City of Parramatta**, **Western Sydney**, **Sydney**

- Camellia
- Carlingford
- Clyde
- Constitution Hill
- Dundas
- Dundas Valley
- Eastwood
- Epping
- Ermington
- Granville
- Harris Park
- Model Farms
- Newington
- Northmead
- North Rocks
- Oatlands
- Old Toongabbie
- Parramatta
- North Parramatta
- Pendle Hill
- Rosehill
- Rydalmere
- Seven Hills
- Silverwater
- South Granville
- Sydney Olympic Park
- Telopea
- Toongabbie
- Wentworth Point
- Wentworthville
- Winston Hills
- Westmead

List of Sydney suburbs

- **v**
- **t**
- **e**

Geography of Parramatta River

Sources

- *Toongabbie Creek*
- *Darling Mills Creek*

Tributaries: left

- *Vineyard Creek*
- *Subiaco Creek*
- *Archer Creek*
- *Smalls Creek*
- *Charity Creek*
- *Lane Cove River*

Tributaries: right

- *Duck River*
- *Haslams Creek*
- *Powells Creek*
- *Iron Cove Creek*
- *Hawthorne Canal*

Islands

- *Rodd Island*
- *Snapper Island*
- *Spectacle Island*
- *Cockatoo Island*

Parramatta River ferry services

- *Parramatta*
- *Rydalmere*
- *Sydney Olympic Park*
- *Meadowbank*
- *Kissing Point*
- *Cabarita*
- *Abbotsford*
- *Chiswick*
- *Huntleys Point*

River crossings

- Rings Bridge
- Bernie Banton Bridge
- Lennox Bridge
- Barry Wilde Bridge
- Elizabeth Street Footbridge
- Macarthur Bridge
- Clyde-Carlingford railway bridge
- Thackeray Bridge (footbridge)
- Silverwater Bridge
- James Ruse Drive bridge
- John Whitton Bridge
- Meadowbank Railway Bridge
- Ryde Bridge
- Mortlake Ferry
- Gladesville Bridge

River inlets and bays

- Homebush Bay
- Kissing Point Bay
- Morrisons Bay
- Kendall Bay
- Glades Bay
- France Bay
- Exile Bay
- Canada Bay
- Kings Bay
- Hen and Chicken Bay
- Looking Glass Bay
- Abbotsford Bay
- Wallumatta Bay
- Five Dock Bay
- Lukes Bay
- Drummoyne Bay
- Iron Cove

Suburbs: north

- North Parramatta
- Rydalmere
- Ermington
- Melrose Park
- Meadowbank
- Putney
- Tennyson Point
- Gladesville
- Henley
- Huntleys Point
- Huntleys Cove
- Hunters Hill
- Woolwich
- Greenwich

Suburbs: south

- Parramatta
- Camellia
- Silverwater
- Newington
- Wentworth Point
- Sydney Olympic Park
- Liberty Grove
- Rhodes
- Concord
- Mortlake
- Breakfast Point
- Cabarita
- Canada Bay
- Five Dock
- Wareemba
- Abbotsford
- Chiswick
- Drummoyne
- Russell Lea
- Rodd Point
- Haberfield
- Lilyfield
- Rozelle
- Birchgrove

- **v**
- **t**
- **e**

Convicts in Australia

- Assignment
- Australia Day
- Emancipation
- Female factories
- Freedom
- History of Australia (1788–1850)
- New Holland
- Women

Penal colonies

- Cockatoo Island
- Rosehill
- Sydney Cove
- Moreton Bay
- Redcliffe
- Maria Island
- Port Arthur
- Richmond
- Risdon Cove
- Macquarie Harbour (History)
- Norfolk Island (History)
- Saltwater River
- Sullivans Cove
- Western Australia

Events

- First Fleet (1788)
- Second Fleet (1789)
- Third Fleet (1791)
- *Lady Shore* mutiny (1797)
- Castle Hill Rebellion (1804)
- Rum Rebellion (1808)
- Capture of the brig *Emu* (1813)
- *Argo* disappearance (1814)
- Norfolk Island mutinies (1826–1846)
- *Cyprus* mutiny (1829)
- Bathurst Rebellion (1830)
- *Badger* escape (1833)
- *Frederick* escape (1834)
- Wreck of the *George III* (1835)
- Wreck of the *Hive* (1835)
- Wreck of the *Neva* (1835)
- Cooking Pot Uprising (1846)
- Catalpa rescue (1876)
- Anti-Transportation League

Convict ships

- First Fleet
- Second Fleet
- Third Fleet
- New South Wales
- Norfolk Island
- Tasmania
- Western Australia

**Governors and
commandants**

- Arthur
- Bligh
- Bourke
- Brisbane
- Collins
- Darling
- Davey
- Denison
- Eardley-Wilmot
- Franklin
- Gipps
- Hunter
- Johnston
- King
- Logan
- Macquarie
- Paterson
- Phillip
- Sorell

Surgeons

- William Bland
- *Arthur Bowes Smyth*
- William Redfern
- *D'Arcy Wentworth*

Entrepreneurs

- Enoch Barratt
- Daniel Connor
- Daniel Cooper
- John Davies
- William Field
- William Hutchinson
- Mary Hyde
- Henry Kable
- Solomon Levey
- Simeon Lord
- Mary Reibey
- Robert Sidaway
- James Squire
- John Tawell
- Samuel Terry

Architects

- James Blackburn
- Francis Greenway

Bushrangers and escapees

- Charlotte Badger
- Matthew Brady
- Mary Bryant
- William Bryant
- William Buckley
- Moondyne Joe
- John Caesar
- Martin Cash
- William Chopin
- Michael Howe
- Lawrence Kavenagh
- John Mitchel
- Thomas Muir
- John Boyle O'Reilly
- Alexander Pearce
- William Westwood

Notable convicts and personnel

- Joseph Backler
- Thomas Bock
- Richard Browne

Music

- Transportation ballads
- "Botany Bay"
- "Moreton Bay"
- "Jim Jones at Botany Bay"
- "Van Diemen's Land"

Film

- *For the Term of His Natural Life* (1908)
- *The Assigned Servant* (1911)
- *It Is Never Too Late to Mend* (1911)
- *The Lady Outlaw* (1911)
- *The Life of Rufus Dawes* (1911)
- *The Mark of the Lash* (1911)
- *One Hundred Years Ago* (1911)
- *The Romantic Story of Margaret Catchpole* (1911)
- *Sentenced for Life* (1911)
- *Moondyne* (1913)
- *Transported* (1913)
- *The Tenth Straw* (1926)
- *For the Term of His Natural Life* (1927)
- *To New Shores* (1937)
- *Red Sky at Morning* (1944)
- *Under Capricorn* (1949)
- *Botany Bay* (1953)
- *Adam's Woman* (1970)
- *Journey Among Women* (1977)
- *The Last Confession of Alexander Pearce* (2008)
- *Van Diemen's Land* (2009)
- *The Nightingale* (2017)

Popular culture

Television

- *The Devil Makes Sunday* (1961)
- *The Devil Makes Sunday* (1962)
- *Against the Wind* (1978)
- *Sara Dane* (1982)
- *For the Term of His Natural Life* (1983)
- *The Incredible Journey of Mary Bryant* (2005)
- *Banished* (2015)
- *The Secret River* (2015)

- Journals of the First Fleet
- *It's Never Too Late to Mend* (1856)
- *The Broad Arrow* (1859)
- *Great Expectations* (1861)
- *The Wild Goose* (1867)
- *For the Term of His Natural Life* (1872)
- *Moondyne* (1872)

Australian Convict Sites

- [Brickendon Estate](#)
- [Cadmans Cottage](#)
- [Cascades Female Factory](#)
- [Coal Mines](#)
- [Commissariat Store, Brisbane](#)
- [Darlington Probation Station](#)
- [Elizabeth Farm](#)
- [Experiment Farm Cottage](#)
- [Fremantle Prison](#)
- [Great North Road](#)
- [Hyde Park Barracks](#)
- [Kingston and Arthur's Vale](#)
- [Lennox Bridge](#)
- [Old Government House](#)
- [Parramatta Female Factory](#)
- [Port Arthur](#)
- [Richmond Bridge](#)
- [Richmond Gaol](#)
- [Ross Female Factory](#)
- [The Old Windmill, Brisbane](#)
- [Vaucluse House](#)
- [Woolmers Estate](#)

Authority control databases Image not found or type unknown [Edit this at Wikidata](#)

International

- [VIAF](#)

Geographic

- [MusicBrainz area](#)

Check our other pages :

- [Custom web design Parramatta](#)
- [Search Engine Optimisation Parramatta](#)
- [Affordable SEO Parramatta](#)
- [SEO consultant Parramatta](#)
- [Parramatta digital marketing](#)

SEO company Parramatta

SEO Parramatta

Phone : 1300 684 339

City : Sydney

State : NSW

Zip : 2000

[Google Business Profile](#)

[Google Business Website](#)

Company Website : <https://sydney.website/seo-sydney/local-seo/seo-parramatta/>

USEFUL LINKS

[SEO Website](#)

[SEO Services Sydney](#)

[Local SEO Sydney](#)

[SEO Ranking](#)

[SEO optimisation](#)

LATEST BLOGPOSTS

[SEO community](#)

[SEO Buzz](#)

[WordPress SEO](#)

[SEO Audit](#)

[Sitemap](#)

[Privacy Policy](#)

[About Us](#)

[SEO Castle Hill](#) | [SEO Fairfield](#) | [SEO Hornsby](#) | [SEO Liverpool](#) | [SEO North Sydney](#) | [SEO Norwest](#) | [SEO Parramatta](#) | [SEO Penrith](#) | [SEO Strathfield](#) | [SEO Wetherill Park](#)

Follow us