



Australian Stockholm *Junior Water Prize*

GUIDELINES &
INFORMATION KIT

What is the Stockholm Junior Water Prize?

The Stockholm Junior Water Prize (SJWP) is the most prestigious youth award for a water-related science project at high school. The prize taps into the unlimited potential of today's youth as they seek to address water challenges.

Created in 1997 by the Stockholm Water Foundation, the prize was established to mirror the adult Stockholm Water Prize. The Stockholm International Water Institute facilitates the international competition and the student prize enjoys the patronage of HRH Crown Princess Victoria of Sweden.

The Australian Water Association organises the Australian competition with support from Xylem.

The Australian Stockholm Junior Water Prize (ASJWP) aims to inspire students to develop solutions to real water problems and encourages students into careers in the international and Australian water community.

The ASJWP winner goes on to represent Australia at the international competition in August in Stockholm, Sweden where national winners from over 30 countries travel to participate in a week-long cultural exchange program and compete for the international prize.

Task Outline



Students are invited to develop practical and innovative water research projects on a local, regional, national or global topic that has the potential to improve quality of life and/or the environment. All projects must use scientifically accepted methodologies for experimentation, monitoring and reporting results, including statistical analyses.

Steps:



1 Choose a topic to research

This is your chance to investigate something you are passionate about, something that interests you or something you think could make a real change. The sky is the limit!



2 Decide on a hypothesis or key question

The hypothesis is an 'educated guess'. What do you think your results will achieve? What do you want to know? Why is it important that you find this out?



3 Research background information

This is important in all projects. It's time to discover what has been done, if anything, on this issue. What part of this research can help you undertake your experiments?



4 Undertake experiments and research

An experiment starts and finishes with factors that change during the experiment. These are the variables. This is where you might want to seek assistance from your science teacher to ensure you undertake accurate experiments or monitoring.



5 Analyse results

Take some time to carefully review all the data you have collected from your experiment. Use charts and graphs to help you analyse the data and patterns. Did you get the results you had expected? What did you find out from your experiment?



6 Write a scientific report with results and conclusions

This is where you put it all together. Keep reading for more tips on writing the report.



7 Create a 3-minute video pitch of your project

This short video is a fun way for you to explain your research to the judges, so they can decide on which entries to shortlist. Make it as engaging and imaginative as you can!



8 Shortlisted entries present to judges via video conference

If the judges shortlist your entry, you'll present your research to them via video conference.



Project Criteria

The project can earn a maximum score of 115 points and is judged using six different criteria. A score from 1 to 5 is assigned (1 being the lowest score).

Relevance

- › Does the project target an important challenge within the water environment?
- › Is the project scientifically relevant (can the scientific level be related to basic, applied research and are the results applicable for implementation)?
- › Can the project contribute to the improvement of the quality of life or the environment?
- › Is the project proposing innovative solutions to unsolved problems?
- › Does the project increase the awareness of water issues?
- › Does the project integrate environmental and societal issues?

Creative ability

- › How to pose a problem
- › How to solve a problem
- › Analysing data
- › Experiments or investigations
- › How to mediate and make the affected parties aware of the problem

Methodology

- › Is there a clearly defined idea on which a result can be achieved?
- › Is the problem well defined?
- › In what way has it been limited?
- › Has the work been planned accordingly?
- › Is there adequate information upon which to draw conclusions?
- › Have the possible misinterpretations of the data been taken into consideration?
- › Are there any new questions or suggestions for continued research?

Subject knowledge

- › Is the student familiar with literature and ongoing research in the field?
- › Upon what sources has the work been based?
- › Is the list of references satisfactory? (Have the references really been studied?)
- › To what extent have sources of popular science been consulted?
- › Is the author familiar with the topic dealt with in his/her work?
- › Is the author knowledgeable of ongoing research in the field? Terminology?
- › Is the author familiar with alternative solutions?

Practical skills

- › Has the student made the exhibit themselves?
- › Have they carried out the measurements, etc.?
- › What help has been provided by parents, teachers, professionals, etc.?
- › Has advantage been taken of material available in school?
- › From where has the equipment been obtained for the exhibit? Was it self-made?
- › How well have available techniques been used?

Report and presentation

- › Can the student present the work in a proper and informative way, both written, verbally and through an exhibit?
- › Is the content of the work well structured?
- › Is the level of text, illustrations, diagrams and language in the written report sufficient?
- › Is the display appealing with regards to any special qualities and personal touch?
- › Is there a relationship between the display and text material?



Eligibility & Judging

Eligibility

All Australian school students aged between 15 and 20 years of age can enter the ASJWP.

Entered projects must have been developed while still in **secondary school**. If students have just graduated from secondary school, but have not yet started university, they will still be eligible to enter the competition.

Individuals and groups of up to three students are eligible to enter.

Judging

A judging panel to assess nominations for the ASJWP is established by the Australian Water Association and consists of between six and nine members of the water industry.

The judging process is outlined below:

- › Review of student papers based on project criteria, outlined in this document.
- › Review of students' three-minute video pitch project overview.
- › Review of shortlisted student presentations via video conference.
- › Selection of national winner based on both paper and presentation scores.
- › Opportunity for the top four students to present their projects to Australian Water Association members and water industry professionals with an announcement of the winner live via webinar.
- › Official winner presentation at the Ozwater Gala Dinner.

Prizes



Each participant receives an Australian Water Association certificate. The Australian winner receives travel and accommodation to Ozwater, to attend the National Awards Gala Dinner; a trophy; and a trip to Stockholm to

compete in the international Stockholm Junior Water Prize.

The Australian winner will automatically join the Water Tank, an alumni community of the competition to connect and collaborate and advance their project and career.

The overall international winner of the Stockholm Junior Water Prize receives US\$15,000 and a crystal sculpture. The winner's school receives US\$5,000.



Developing a Paper

Following are recommendations from the SJWP judging panel based on their experience in reviewing projects:

Projects should not only include a problem statement but clearly explain how the project can contribute to a solution. Even if the project itself may not solve the problem, it should demonstrate how the activities in the project can play a role in a solution.

Each project should try to address a cause-effect solution. This means studying not only the environmental effect (e.g. nitrogen load in a lake system), but also the causes behind the problem and ways of solving the problem. For example, a study on the eutrophication level of a lake in itself will not be highly competitive in the SJWP competition. On the other hand, if the study also addresses the causes behind the environmental disturbance and outlines how eutrophication monitoring will contribute to improved management of the lake environment, then the project will stand a better chance in the competition.

Development-oriented research projects are strongly welcomed. However, it is important when presenting an applied solution to a problem (e.g., the invention of a

new technology or a better way of analysing a problem) that the project refers to previous work. Include an explanation of the gaps you are filling that others have not studied before.

If the project focuses on raising awareness and creating a change in the way people manage water, it is important to document the work in a way that gives quantitative evidence to what has been achieved. For example, it is not enough to say that "many people at the project site have started saving water with a new technology." Instead, it is important to show (e.g., through surveys) the number of people that have adopted a new way of managing water in a structured way (e.g., change over time, etc).

If a project is a long-term school project, clearly show what has been done by whom over the years. Show what you have contributed to the final consolidated result.

It is important that you clearly show that you were responsible for conducting the research and developing the written the project.

Finally, it is important that you show that you have read relevant literature on the topic for your own orientation.

PAPER FORMAT REQUIREMENTS

- The paper must be written in English
- The paper must be submitted electronically as PDF document and no larger than 2MB
- The paper must be typed in 12-point Aptos and left aligned using 1.5 spacing and margins of 2.54cm on all sides of the paper
- Together with figures, photographs, tables, and annexes, the paper must not exceed 20 pages of single-sided A4 pages and 2MB.
- All pages, except the title page, must be numbered at the bottom centre. The Title Page is not included in the 20 page limit but will be included as part of the 2MB.

Use of Artificial Intelligence (AI)

- If artificial intelligence tools are used in any part of the project, students must:
- Clearly explain how AI was used.
- Specify which sections or procedures involved AI.
- Confirm that all analysis and conclusions remain the students' own work.
- Failure to disclose AI use may affect eligibility.

Plagiarism and Originality

All submitted work must be original. Plagiarism will result in disqualification. All references must be properly cited, and external assistance must be transparently disclosed.

STRUCTURE OF THE PAPER

Title Page (Not Numbered)

- "Entry to the Stockholm Junior Water Prize [Year]"
- Project Title
- Student Name(s)
- Date of Birth
- School Name
- Current Year Level
- Country

Preliminary Matters (Page Numbering Begins Here)

Abstract (maximum one page, single spaced).

The abstract is a complete and concise summary of the research project and the findings. It should provide an interesting synopsis of the project and use language that appeals to a broad audience. The abstract should contain the following:

- a one sentence statement of the objective of the study
- the research methodology used to arrive and the conclusion
- the results observed
- the conclusions of the study (including recommendations and suggestions)

Tips for a Good Abstract:

- Write the abstract last so that it accurately reflects the content of the paper.
- Briefly state the problem or purpose.
- Indicate the theoretical or experimental plan used.
- Summarize the principal findings and point out major conclusions.
- If abbreviations are used, define them at first use in the abstract and again at first use in the paper body. For abstract samples, visit www.sjwp.org, scroll down and click on Winning Research, then click the Winners tab to review previous national winner's abstracts.

Table of Contents

List of sections in the research paper by page number

Key Words

List of words or short phrases that research focuses on. They are used to help individuals locate information on specific research areas, such as through a web search.

Abbreviations and Acronyms

List of abbreviations and acronyms used in the paper.

Acknowledgements

Acknowledgement of those who assisted in research including disclosure of external help and AI use. It is important to clearly indicate how much external help you received.

Biography (maximum half page per student)

The biography should include information about you, including what your interests are, what you want to study, etc.

Main Paper Body

1. Introduction

This section sets out your project in broad details. Describe the water-environment problem you studied and why it was important. Also put your project in its scientific setting, detailing at least the most relevant work done on your project topic by others. We don't expect a very detailed literature review, but we do expect that you understand the scientific context of your project. (See References for advice on how to give in-text references to the work of others.)

2. Materials and Methods

In this section you must detail all of the experimental procedures that you used in your project – all methods and all materials. However, for standard analyses it is not necessary to describe the processes in detail; it is sufficient to give a reference to the methods in a book. If non-standard methods were used, you must describe them in detail. If they are too lengthy, they can be placed in an Annex at the end of your paper (see Annexes).

3. Results

In this section, you present all of the results you obtained in your research. Present them either as tables or figures, along with in an appropriate description, but do not present the same information in both table and figure format. Choose whichever of these formats you think is most suitable for the particular set of results you are presenting. If you do analysis of your results, you can present the results of this analysis in a separate table or figure.

4. Discussion

Note: This is an extremely important section which the judges pay close attention to, so think about it very carefully.

Here you must discuss your results. You may wish to include the more important analyses of your results in this section (rather than in Results section). You must discuss how the results are important to the water environment problem you were studying, how novel they are, and how they relate to the results of others working on a similar project (are they the same, similar, or different? why?).

You should also discuss your results in the wider scientific and/or social context, for example, are your results useful to local or national government agencies? Are they relevant to local people? Explain your answers.

Of course, if your project is completely novel, then you may not be able to discuss your results in relation to the results of others. In such a case, you must discuss your results in the wider scientific and/or social context only.

5. Conclusions

We recommend that you number your conclusions and present them on a maximum of two pages (one page is perfectly acceptable). Your conclusions should be short and to the point. As a guide, each conclusion should be no more than 1–3 short sentences long. Please remember that this section is for your conclusions and only your conclusions. It is not the place to discuss your results (all discussion belongs in Discussion).

6. References

The purpose of providing a reference is to enable interested parties to obtain and read the reference, so you must provide all the information necessary for this. If you are familiar with the “Harvard” system, then you may use it. Otherwise, we recommend you use this simpler method:

In the text, give references as numbers in square brackets. For example:

“Smith [1] found that ..., but other workers have found the opposite [2, 3].”

“We used the acid-dichromate method to measure

the wastewater COD [4] and the membrane-filtration technique with lauryl sulphate broth and overnight incubation at 44 to count the number of faecal coliform bacteria in both the wastewater and the river [5].”

Immediately after the Conclusions section you must list in detail all the in-text references you have made. The list is numerical, using the numbers you used in the text. So, in the above example, the first reference is to Smith. How you present this reference depends on whether it is a book, a paper in a scientific journal, a chapter in a book, or a newspaper report.

a) Book:

[1] Smith, AB (2002) *The Biology of Polluted Rivers*. Academic Press, San Diego, CA.
i.e., Surname, Initials (Year) Title of Book. Publisher's Name, City and Country (or State if the USA) of publication.

b) Journal or Paper:

[1] Smith, AB (1998). The biology of highly polluted waters: a review. *Journal of Aquatic Biology* 31, 984–1018.
i.e., Surname, Initials (Year). Paper Title. Full Name of Journal Volume Number, First and Last Page Numbers of the Paper.

c) Book Chapter:

[1] Smith, AB (2001). The biology of polluted waters. In *Water Pollution* (ed. CD Jones and EF Bull), pp. 547–591. Academic Press, San Diego, CA.
i.e., Surname, Initials (Year). Title of chapter, In Title of book (ed. [= edited by] Initials and Name of all the editors), first and last page numbers of the chapter. Publisher's name, City and Country/State of publication.

d) Newspaper or Magazine Report:

[1] “Our rivers are polluted”, *Daily Express* (London, England), 5 June 2003, p. 6.

e) Non-English References:

If the language of the reference uses the Latin alphabet, give the title in the original language followed by a translation in English in square brackets – for example:
[5] Poincaré, JP (2001). *Le Lagunage Naturel* [Waste Stabilization Ponds]. Editions Eau, Paris.

For other alphabets, simply give the translation in English with the original language given at the very end in round brackets – for example:

[11] Chinese Academy of Engineering (2002). *Design Manual for Wastewater Treatment*. Chinese Academy of Engineering, Beijing (in Chinese).

f) More than one author use: [1] Smith, AB, Jones, CD and Bull, EF (1996).

g) When referencing a Web site, include the author (if any), title of the site, URL, date accessed, and any other identifying information.

7. Bibliography

In addition to the list of specific references, you may (if necessary) give a list of books and other sources of information that you consulted generally but have not provided as in-text references. This list is termed Bibliography, and it follows immediately after References. The items in your Bibliography list are referenced in the same way as described above.

Remember to give all the information necessary to enable someone else to obtain the references you quote in your paper.

8. Annexes

Use annexes only if necessary, for example, to detail non-standard methods of analysis or to give detailed results if you have only summarized them in the Discussion section. Annexes are used to give detail that would otherwise make the main text too lengthy or cumbersome. You should number your annexes in order, as follows:

Annex I. Method used for the determination of chlorophyll a

Annex II. Detailed results of in-river chlorophyll a measurements



Important Information

Closing Dates

Completed entries for the competition close March. [See the website](#) for dates.



How to enter

- 1 Submit your project outline via the online form on our website. Include the topic you'll be researching and a 150-200 word overview. You can also let us know if you'd like some support or expertise to help with your project.
- 2 Complete your project according to the SJWP criteria and project guidelines.
- 3 Download the Prize Nomination Form from www.awa.asn.au/awards/student-awards/asjwp
- 4 Submit your entry online (www.awa.asn.au/awards/student-awards/asjwp) with these attachments:
 - ✓ A completed nomination form with signed declarations
 - ✓ The extended abstract or full paper in MS Word and/or PDF format
 - ✓ Biography (180-250 words) in MS Word format
 - ✓ Photo of nominee (jpg)
 - ✓ 3-minute video pitch



Timeline

March

Submissions due

March

Shortlisted finalists present their projects to the national jury

May

Winner announced at the Australian Water Awards, presented during Ozwater

August

International competition in Stockholm at World Water Week