BIAZA
BRITISH & IRISH ASSOCIATION OF ZOOS & AQUARIUMS

BIAZA Guidance:

Careers in Zoos and Aquariums

Ver 2. 2026

Acknowledgements

This guide has been created by the BIAZA Office with the input of our voluntary Committees and Working Groups. We would like to extend our appreciation to all those who contributed their time and expertise to this guide.

Please note that this document is for guidance purposes only and is intended to be an introduction to possible zoo and aquarium career options. You should use it as a starting point to do your own further research into careers and courses that interest you including checking the up-to-date details of information provided here.

(left) Paignton Zoo
Cover Image: Eleanor Brown

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Introduction

In Britain and Ireland, there are hundreds of zoos, safari parks, bird gardens and aquariums open to the public, which collectively employ thousands of people in full-time positions. BIAZA is the professional zoo body in Britain and Ireland and represents 130 of these organisations.

Job and career options in zoos and aquariums are very varied. If you want to work in a zoo the first step is to decide what type of career you are interested in. Animal care is of course a big part of zoo operations and jobs directly involving animal care include zookeeper, aquarist, veterinarian and veterinary nurse, and curator. There can also be jobs supporting animal care such as registrar, nutritionist, animal welfare officer, zoo researcher and horticulturalist.

Other career options focus on achieving the key mission aims of zoos and aquariums in conservation, education and research. These include teachers and educators, presenters, field conservation officers, reserve managers, fundraisers and grant managers, researchers, project managers and research administrators.

There are also different career options that are focused on making zoos and aquariums successful visitor attractions, which in turn provides the resources and opportunities needed to achieve their mission aims, including in the areas of customer service, administration, catering, retail, marketing, communications, HR and management.

You may also want to think about what type of zoo or aquarium you would like to work in. There is a lot of diversity across the sector such as zoo size, charity or private run zoos, specialising in certain taxa such as aquariums, bird of prey centres etc. and this can affect ways of working and the types of roles on offer. For example, large zoos often have a greater number of more specialist roles allowing you to focus on specific career areas while in smaller zoos staff may cover a wider variety of activities within their jobs so you can develop broader experience (e.g. specialist research officer role vs a keeper who is also responsible for coordinating research).

Careers in zoos and aquariums are very popular, and competition for jobs is often high. As well as obtaining relevant qualifications, you will need to be proactive in getting as much work experience as you can to secure your first zoo job. Continuous Professional Development (CPD) is also very important and will be essential to developing your career. In this guide we share information and links to further resources to help you get started in a career in zoos and aquariums.

Banner photo: The Deep

Animal Care

Zookeeper or Aquarist

Drusillas Park

A career as a zookeeper or aquarist offers a unique opportunity in the specialised and demanding profession of maintaining captive exotic animals for conservation, research and education.

Zookeepers care for a diverse collection of animals, from mammals, birds and reptiles to amphibians, fish and invertebrates. Many keepers become highly specialised, concentrating on a specific group of animals such as birds, great apes, elephants or reptiles. Aquarists specialise in keeping aquatic species.

What does a keeper do?

Keepers provide the daily care for the animals, working to maximise the welfare of each animal every day. They are often also involved in enclosure maintenance, record keeping, visitor education, talks and experiences and zoo research. They may also be involved in population management and collection planning, enclosure design and project management and volunteer and team leadership, particularly as they become more experienced.

Animal habitats need to be maintained. Animal enclosures need to be hygienically cleaned every day; this is the major part of a keeper's daily workload and, depending on which species are involved, can be very physically demanding. Sweeping, hosing, scrubbing, shovelling and window cleaning are repetitive but essential daily tasks. A keeper must be prepared to work outside in all weather conditions, or indoors in what are sometimes tropically heated environments. Many taxa need carefully controlled habitats in terms of temperature, lighting and humidity, so alongside cleaning much time is spent on monitoring and adjusting these.

Aquarists in particular, but also keepers working with certain taxa, need to manage water quality which involves chemical testing and maintaining filtration and life support systems.

Food preparation is another significant task each day. Zoo animal diets are carefully managed and keepers follow diet plans, which set out daily food types, amounts and presentation methods. An understanding of nutrition is essential for good diet management, although in some zoos/aquariums, diets are analysed and controlled by an employed nutritionist or manager. Keepers need to keep and prepare feeds - for example pellets, fresh produce, meat or hay - in a pest-free, clean environment. Again, this can be quite physical work depending on the taxa, chopping foods, transporting it to enclosures and presenting it in creative, enriching ways.

Keepers must also be excellent observers, learning habits and behaviours of both individual animals and groups. Keepers know the animals in their care better than anyone else and must be able to spot subtle signs of injuries or illness and then react accordingly.

These responsibilities should not be underestimated, since they are essential in maintaining a healthy and reproductively successful animal collection. It is important to maintain accurate and detailed records in a daily diary or computerised system about the events in the animal's life, identification, births, deaths, sickness, mating behaviour etc. What may seem like minor details at the time may be valuable points of reference at a later date.

Other duties include the maintenance of animal enclosures and providing enrichment and training. Keepers may help design, build and repair animal habitats; a basic grasp of DIY and gardening skills is required for the upkeep of an area.

In order to provide an enriched experience for the animals in their care zookeepers need to provide the correct habitat, along with enrichment provision, to promote species-specific behaviours.

Keepers should base all enrichment on an in-depth knowledge of the ethology and natural history of each species. Additionally, keepers should be able to apply an evidence-based approach focusing on setting goals and behavioural outputs, recording, evaluating and continually improving enclosures and enrichment strategies.

In most animal collections, animal care is largely hands-off. Modern zookeepers are expected to have a basic understanding of behaviour science, the way all animals learn and how to apply that understanding in the zoo environment to improve animal welfare. While keepers are expected to be able to handle some species, they will also need to know how to use trained behaviour as an alternative to manual restraint and to support co-operative management and medical care behaviours, in collaboration with veterinary colleagues.

Keeping is very rewarding but can also be an emotionally difficult job. Keepers often form strong bonds with the animals in their care but must accept that animals are moved to other sites as part of conservation breeding programmes. Keepers have to care for animals through illness and old age and will experience animal deaths. It is important that keepers look after their mental health and avoid compassion fatigue.

Natasha Jefferies

Keepers have an important role in the education of visitors and in public relations for their institutions. This may involve giving prepared talks to school groups, one-to-one tour experiences, or just chatting to the public as they meet them on their daily rounds, so communication skills are very important. They should be knowledgeable about the animals in their zoo, their natural habitat and relevant conservation initiatives.

They must be open to interacting with the public at all times, maintain a smart appearance and be friendly and professional when answering questions. Surveys of visitor experience reveal that interactions with keepers are highly valued by visiting public, and help to increase the public's awareness of the importance of wildlife conservation and global environmental issues that affect the habitats of many threatened species.

Modern animal husbandry is evidence -based so scientific research skills and understanding are important for keepers. They need to be able to review new research and apply the latest knowledge to their work, constantly learning, evaluating and improving their animal care. Keeping up to date with, and strictly following, health and safety protocols is also essential.

Zookeepers and aquarists, among other staff, are also valuable during zoo licensing inspections and BIAZA Accreditation screenings. They must be aware of the policies the zoo must follow in order to communicate how they are following them to inspectors/screeners. Zoo/aquarium inspections can be a stressful time for the whole organisation, but keeping on top of legislation and policy will smooth the process. BIAZA provides resources to its member zoos/aquariums to assist with their accreditation screenings, as well as zoo licensing requirements.

How do I get into animal care?

The educational requirements for an entry level zookeeper vary and there are different routes to get started.

Zookeeping requires a broad set of skills, but scientific understanding is particularly useful, as are practical skills, so focussing on these at school and college is a good starting point. There are many specialist courses on Animal Management and Zoology available at colleges and universities. We would recommend looking out for courses that offer opportunities to gain practical experience as well as theory and knowledge and/or are closely linked to a BIAZA member zoo, aquarium or college. We have more information about animal care qualifications on our website. It is also possible to begin working towards the BIAZA and Sparsholt College's DMZAA (Diploma in the Management of Zoo and Aquarium Animals) as a zoo volunteer through the Certificate in the Management of Zoo and Aquarium Animals for Volunteers. Some zoos also offer apprenticeship schemes which are well worth looking into, particularly those using the new Keeper and Aquarist Level 3 Apprenticeship which was developed directly by the sector.

If you are looking to become an aquarist, many will have completed an undergraduate degree in a discipline such as marine biology but did not take it with an aquarium career in their planning. So whilst a degree is not a requirement you will find many aquarists are academically qualified to this level. There are courses available in aquatic animal management which will actually stand you in better stead for the knowledge and responsibilities of the role. Some prior knowledge of maintaining aquatic animals in captivity from a setting such as the retail industry, or university research facility can also help with transferrable skills for an application. For larger public aquariums it can be beneficial to have at least started scuba diving training, and to be able to demonstrate previous experience of interacting with the public.

As previously stated, competition for zookeeping jobs is fierce and although having good qualifications is a valuable asset, practical animal care experience is often needed to get your first job. Having additional transferrable skills will also help you stand out. These may include experience of dealing with health and safety requirements and writing risk assessments, or even involvement in fundraising initiatives, dealing with the media, report writing, and public speaking.

Doing work experience or regular volunteering is an excellent way to begin building experience, and you can find lists of zoos offering these opportunities on the BIAZA website. However, working with domestic animals or native wildlife is also great preparation for zoo work; sanctuaries, stables, kennels or catteries, for example. Most importantly, if you get the chance to gain some experience, do it well, work hard, be enthusiastic and amenable.

Contacting the HR or volunteering team at the zoo you would like to work in might be helpful. Please consider that people in zoos often deal with a high volume of queries from people who would like to work for them, so you will need to be patient.

Zookeeping is a highly popular career choice so securing a job isn't easy. Pay in the industry does reflect the fact that organisations rarely have problems recruiting keepers; often they will receive many applications for each advertised post. That said, the job is very rewarding in many other ways, particularly making a difference to conservation and to the lives of the animals in your care. Many zookeepers consider their role a vocation rather than simply a job.

Noah's Ark Zoo Farm

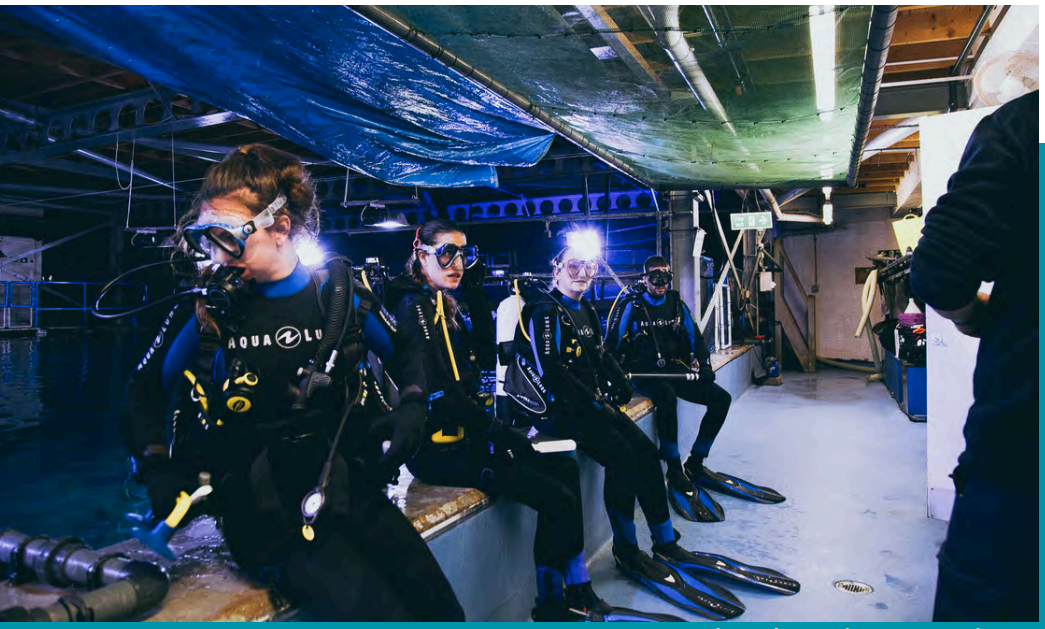
What is the career progression for a keeper/aquarist?

Keepers usually start as a trainee, although they usually already have an initial qualification relevant to animal management. Zoos have different requirements for progression to qualified keeper status but typically it involves achieving further qualifications or building up a certain amount of experience. The industry gold standard qualification is Diploma in the Management of Zoo and Aquarium Animals (DMZAA) run by Sparsholt College and BIAZA, which can only be undertaken once employed as a keeper. The course is a two-year City & Guilds accredited course taken as home study, a series of essays on general zoo and species husbandry topics, an exam, a specialist project and a portfolio of evidence of day-to-day practical keeping skills. Many collections will require trainees to carry out this work in their own time, so a high degree of commitment is required. Some zoos also run their own training programmes for their trainee keepers.

Once qualified, progression varies between different animal collections, the next steps usually being Senior Keeper, Head of Section, Head Keeper and Curator. However, it is normally the case that a position needs to become vacant before promotion can occur which can take many years or even decades.

Moving between zoos, often needing to relocate to do so, and applying for more senior roles is often a quicker way of moving up the ladder. It is also possible to specialise in other related areas such as moving onto a career as a Registrar, Nutritionist, training or welfare expert for example.

Career progression requires being proactive in seeking opportunities to get further qualifications and experience, and build your reputation at your collection and in the wider zoo community. Further study can be gained in other areas of animal management such as science and research, studbooks and in situ conservation. Additional responsibilities can sometimes be taken on as you become more experienced such as becoming a breeding programme coordinator or a BIAZA Committee or Working Group member. There may be opportunities to attend meetings, workshops or symposia for enrichment, taxon working groups or ABWAK, etc. Information about upcoming events can be found on the BIAZA website. Giving presentations at such events and collaborating on co-authored scientific papers provides opportunities for professional networking and personal development. Good zookeepers are eager to keep learning for their own benefit and that of their charges.



National Marine Aquarium

Veterinarian

and Veterinary Nursing

A career as a zoo or aquarium veterinarian or veterinary nurse is a specialist one requiring considerable study, qualifications and continuous professional development. Veterinarians and veterinary nurses are highly regulated professions with strict criteria for achieving professional registration.

What does a zoo veterinarian and veterinary nurse do?

Veterinarians and veterinary nurses working with zoo and aquarium animals have varied roles. They may be directly employed by the zoo and work with their animals full-time or they may work in veterinary practice that has the zoo as one of their clients. They provide urgent care for sick or injured animals as well as carrying out general health checks, disease screening and preventative health care and management. They are often also involved in animal welfare assessments, ensuring animal diets and husbandry procedures are following up to date best practice, collection planning and research and some may also be involved in the zoo's education or conservation activities in the wild.

How do I get started as a zoo veterinarian or veterinary nurse?

You will need to first become a qualified veterinarian or veterinary nurse before specialising in zoo/exotic animals. There are a number of routes into qualifying but it is essential that you follow a route that will allow you to register with the Royal College of Veterinary Surgeons (RCVS) or the Veterinary Council of Ireland (VCI). Gaining work experience with animals will also be important.

ZSL London Zoo

For more detailed information on a career as a zoo veterinarian or vet nurse, please use the following resources:

Royal College of Veterinary Surgeons careers page

British Veterinary Association

British Veterinary Nursing Association

Veterinary Ireland

Irish Veterinary Nursing Association

British Veterinary Zoological Society

Association of Zoo and Exotic Veterinary Nurses

Conservation Education

in Zoos & Aquariums

Paignton Zoo

Did you go to a zoo or aquarium with your school? Modern zoos and aquariums play a leading role in providing the education programs and learning experiences that will help to change attitudes and behaviours in the wider community. These changes can lead to positive outcomes for conservation and protecting the world's biodiversity.

Zoo conservation education programs can be formal (such as sessions with school, college, or scouting groups) or informal (keeper talks, presentations, signs and information/interpretation panels within the zoo). Zoo education projects can also include non-formal learning, encouraging visitors to investigate conservation topics on their own, and perhaps offering guidance.

What does a Conservation Educator do?

Working within the conservation education department within a zoo/aquarium (some will refer to this team as the 'learning' or 'discovery' team) offers scope and challenge and great variety. Daily tasks might vary from:

- curriculum-based classroom sessions with reception-aged children through to A-level and Special Educational Needs groups,
- lectures for college, university or general public groups,
- researching and preparing presentations on set topics,
- carrying out research on visitor behaviour or evaluating education programs,
- writing text for signs and noticeboards,
- developing education materials for use both inside and outside of the zoo,
- public animal talks,
- feeding demonstrations,
- talking with visitors
- leading the animal 'experience' sessions.

You'll notice that much of the time is spent talking with visitors and groups, so zoo education staff become very comfortable with public speaking.

Since conservation education is so crucial for today's zoos (most include 'education' as a part of their mission statement), zoo education staff must keep up-to-date on conservation, sustainability & biodiversity issues – and be aware of the political situation around these issues. Some visitors will expect zoos to be an authority on accurate information about the natural world, from the animal and plant species they will be seeing at the zoo to the current topics of climate change and sustainability. There is also the duty of care zoos have for the planet, so education staff will help with – often will lead – the zoo's strategy for recycling, sustainability, even the goal of achieving zero-carbon energy use. At the very least, education staff will need to be able to speak authoritatively about the zoo's work in these areas.

How do I get started in conservation education?

Zoo education staff come from a variety of backgrounds. Some have been zookeepers and found that the aspect of the job they really liked was talking with visitors, and to groups in the zoo. Such people are really able to talk with passion, knowledge and experience about the animals in the collection, and it is this passion for wildlife and the natural world that can impact visitors. To this end, the role demands a strong interest or passion for wildlife and for conservation.

Many zoo education staff arrive in their role from formal education training – teachers, college or university tutors, lecturers etc. Staff with a teaching background are invaluable in designing the zoo's education program and writing the education policy. They are also very comfortable with the more formal education formats within zoos and developing learning outcomes for such sessions.

Students graduating from college Animal Management courses, university students having completed a BSc degree with Biology, Zoology, Ecology or a related field, staff from formal educational institutions (schools, colleges, etc) are all potential candidates for zoo education departments. Qualifications such as Animal Management or Teaching certifications and university degrees are solid foundations for entering the world of zoo education. A proven record of volunteering within a zoo, perhaps undertaking the industry's recognised course called the Diploma in Management of Zoo and Aquarium Animals (DMZAA, run through Sparsholt College) is also a good option.

(Note: to undertake the DMZAA course, you must be volunteering or working with animals within a zoo. The course covers conservation education).

The key prerequisite for working within a zoo's education department is the passion and commitment to wildlife and the natural world. It is this passion that drives most of us within the zoo world.

What career progression is available?

Zoos can be thought of as the tip of an iceberg: the physical 'zoo' that you see is just the most visible aspect of the zoo's operations. The education programs, and the conservation projects – within the zoo and externally – are less visible but crucial aspects of modern zoo operations and arguably the most important. The potential for growth and career progression extends to supervisory or management potential, even to running education projects overseas for in situ conservation projects. Participation in BIAZA committees, presentations at conferences – all fall within the remit of zoo education departments.

In many zoos, the Head of Education, or Head of Discovery/Learning, is part of the zoo's senior management staff. For some, the Head of Education also oversees the conservation and/or research teams within the zoo. Career progression is therefore limited only by the ambition and ability of the individual.

To be sure: this is a very fulfilling career option.

ZSL Whipsnade Zoo

Volunteer Management
in Zoos & Aquariums

Hertfordshire Zoo

West Midland Safari Park

Many organisations within BIAZA have volunteers as part of their team who support them in a variety of different roles within their organisation. How these volunteers are recruited and managed varies greatly across those organisations. In larger zoos/aquariums, or sitewith a lot of volunteers, there can be a dedicated role for a Volunteer Manager (VM), Volunteer Co-ordinator (VC) or a Volunteer Development Officer (VDO). Volunteer Managers / Co-ordinators usually directly manage the volunteers themselves while Volunteer Development Officers support other managers who do the day-to-day management of the volunteers with recruitment, policy, training etc; a bit like a HR/People Services function for volunteers. In other places volunteer management or coordination may be part of another job within the organisation, such as learning or office manager.

Wherever the job sits or whatever it is called there are certain skills and traits that are universal to working with volunteers, here's a quick guide to the main ones:

Communication skills – important on so many levels. From creating good role descriptions and adverts to having good listening skills to find out and understand what motivates an individual to volunteer. You need to effectively share news and information from your organisation across your volunteer team while making sure that the views and opinions or your volunteers are listened to. This can include face-to-face chats, formal meetings, newsletters and online methods and involves communicating with a wide range of people. Excellent written, verbal and listening skills are therefore essential for this job!

Being open-minded – a glass half-full approach really helps when a VM. Thinking of what a can be done and who could do it is a great way to bring new roles to an organisation and make sure that you are being as inclusive and diverse as possible.

Influencing skills – whether you are asking volunteers if they could do some extra hours to help at an event or trying to convince senior management to invest in a new rest space for your volunteer team the ability to get people to support you to meet your goals is a major part of a VM role. Often VM work on their own or as part of a very small staff team and so they need to be able to generate support from other teams, volunteers, management or supporters to achieve their aims.

Leadership and management Skills – volunteering by definition is any activity that involves spending time, unpaid, doing something that aims to benefit the environment or someone (individuals or groups). That someone has chosen to volunteer for your organisation will hopefully mean that they have an interest in your work, aims and goals but an individual will also likely have additional motivations for volunteering with you such as learning new skills, meeting new people, being part of your team. Ensuring the balance between the needs of a volunteer and your organisations requires planning, leadership and management. A volunteer may be unpaid but that doesn't mean that they can turn up when they want to and pick and choose what tasks they do or don't want to do. Clear role descriptions, volunteer policies and communications provide the groundwork for successful volunteering but as a volunteer manager you need to know when to roll up your sleeves and join in with a task and when it's time to delegate and trust others to get on with things. If after all that things still aren't going according to plan a good VM knows not to ignore issues, handling any problems in a timely and firm but fair manner ensures that the situation doesn't escalate further and everyone is clear about expectations and boundaries.

Intuition – unlike staff management where you are usually working with the same team of people for a significant part of the week many of our volunteers are with you weekly or even less regularly or you may also have a very large team. It can therefore be harder to really get to know them and their ways. As a VM you therefore have to trust your instincts to pick up signals. It might be an organisational change that you suspect won't be well received,

an individual causing you concern or an issue that seems to continually pop up. You won't be able to take on every single suggestion or complaint that comes your way so you will have to use your intuition to work out which require your intervention. Sometimes they give little warning and need a quick response so being able to think on your feet is also a great trait to have.

Organisational skills – when you are in a job that requires you to work with so many people, in a visitor attraction that is very reactive to the weather, holidays and what the animals are up to it can be very hard to make a plan, stick to the plan and deliver. Juggling the demands of the reactive part of the role with those of the regular tasks (such as rota planning, budgets, management reports) can be a challenge but is an important skill for a busy VM.

Qualifications and experience – being quite a niche role most jobs descriptions do not specify the need for any particular qualifications, although some may ask that you are qualified to degree level. The focus is more on having the skills needed for the role, many of which we have already mentioned. Some of these skills you may gain through other employment but volunteering for an organisation yourself is also a great way of developing many these skills. That may be within a BIAZA organisation, as a leader or assistant in something like the Scout or Guiding Association, or as part of a sport or community group. If you take an active role that involves helping with the coordination of other volunteers and the running of events they will provide you with useful skills to take into a job as a Volunteer Manager.

How do I get started in volunteer management?

Being quite a niche role, most jobs descriptions do not specify the need for any particular qualifications, although some may ask that you are qualified to degree level. The focus is more on having the skills needed for the role, many of which we have already mentioned. Some of these skills you may gain through other employment but volunteering for an organisation yourself is also a great way of developing many these skills. That may be within a BIAZA organisation, as a leader or assistant in something like the Scout or Guiding Association, or as part of a sport or community group. If you take an active role that involves helping with the coordination of other volunteers and the running of events they will provide you with useful skills to take into a job as a Volunteer Manager.

What career progression is available?

The potential for growth and career progression extends widely, maybe overseeing volunteer projects outside of or away from your collection and even overseas for in situ conservation projects. Something to note too if you get a VM job within a BIAZA Collection, there is also a highly supportive BIAZA Volunteer Managers' Sub Group (VMSG) to get involved with. You can also get involved with local and national volunteering organisations, extending both your own and others' understanding of volunteers and volunteering. Roles working with people, encompassing a wide range of skills needed for this, can lead to opportunities in many different fields, both within and outside of the zoo and volunteering world.

Gareth Clifford, Watatung Wildlife Reserve

Conservation

in Zoos and Aquariums

Chester Zoo

We all are aware of habitat destruction, pollution, humanity's unsustainable use of the planet's resources. These are all negatively impacting the natural world and all the species within. Since zoos care for, rely on, and attract experts on the plants and animals of this world should it be any wonder that conservation is the focus of good zoos?

Rather than treating 'conservation' as a separate discipline, modern zoos strive to embed 'conservation' as an underlying principle by which they can guide many aspects of their work. From collection planning, education programs, breeding and research projects, field programs *(ex situ)* and even new constructions and exhibits, the protection of wild populations and habitats underpins the planning at each stage. We exist mainly for conservation, so this is something good zoos *are* rather than something they merely *do*.

Not only are zoos and aquariums committed conservation organisations, they are required to actively support conservation projects by licensing, regulatory and accreditation bodies. Zoos and aquariums are staffed by some of the world's leading experts for a range of animal species, and it is exactly this knowledge and dedication that the wider conservation community relies upon to instigate and drive both *in situ* and *ex situ* projects for endangered species. This also makes zoos and aquariums the ideal career path for those interested in working for nature conservation.

What does a zoo/aquarium conservationist do?

For many students when they think of working in conservation, they immediately picture themselves in the field, tracking wild animals in their natural habitat. Although that is a part of the whole conservation picture, it is just that: a part of the picture.

Zoo conservation work entails both *in situ* and *ex situ* projects. The former refers to working in the natural habitat of the species; the latter could be a project for that species within the captive environment of the zoo.

Ex situ projects might entail researching the diet, behaviour, reproductive biology, or specific anatomical or physiological aspects of a target species within the zoo. Such projects are difficult – if not impossible – to carry out on wild populations. This is one area that zoos have always made significant contributions.

Also, coordinated breeding programs for zoos within certain regions (e.g. here in the continent of Europe we have EEPs – EAZA (European Association of Zoos and Aquaria) Ex situ Programmes) provides data on breeding biology, but also allows for the genetic management of species within zoos. The breeding of these species can be controlled, and any conservation outcomes are better coordinated amongst zoos.

In situ projects can incorporate basic surveys of wild populations, evaluating habitats and threats to target species or regions, education or training sessions for local staff and government employees (e.g. Forest Department staff), tracking wild animals, assisting with protection of key populations, or even devising solutions for situations of conflict between local people and the wildlife (especially larger predators or large and destructive species such as elephants).

Many zoo staff are involved in these projects, from keepers, education staff, curators, vets, along with dedicated scientists who may oversee the projects and collaborate with other organisations for the desired conservation outcome. Often zoo staff that are recognised 'experts' for certain species will also contribute to broader conservation issues such as the IUCN's Red List of threatened species.

Zoos still need to fund these projects, so a cadre of staff help raise funds, help with project administration, promote the projects, and senior management will decide which projects the zoo will support. The regional zoo associations will have staff that develop and coordinate projects within the regional zoos, and staff from these zoos will participate in working committees that will drive some of the projects and advise other zoos on how to run their own projects. Many conferences and meetings occur each year around the world, and zoo staff are well-represented at these conservation-focused meetings so presenting the zoo's work at a conference is another important aspect of these projects. Publishing the results of the work is also within this remit.

There really are a plethora of roles within the zoo world for working in 'conservation'! This is not only a crucial part of what zoos do but is personally very rewarding and fulfilling for the staff.

Colchester Zoological Society

How do I get started in zoo/aquarium conservation?

For students that are somewhat obsessed with wild animals, zookeeping is an obvious career path. After a few years, the thrill of working with the animals will inevitably grow to include a deeper interest in conservation issues and a desire to contribute. Working up the ranks of zookeeping can be one way to become involved in the zoo's conservation projects. The path to zookeeping is dealt with elsewhere in this guide.

Projects require zookeepers, scientists, vets, education staff and more – all of which are covered in this document.

Students keen to fast-path their way toward field work are recommended to take university courses that will cover conservation issues, such as Wildlife Conservation, Environmental Management, Conservation Biology, Ecology etc. There are many courses available for students at many universities. Each will have different prerequisites, but most will require 'A' level studies that include biology or other science subjects, or a BTEC extended diploma course in Animal Management, or Agriculture, Marine Biology etc. Post-graduate studies will further qualify students for positions.

Regardless of the university or the course taken, a job application within this field will always be improved if accompanied by evidence of appropriate voluntary work. This could be volunteering on field projects here in the UK with one of the Wildlife Trusts, or RSPB, the Mammal Society etc, or at a zoo, aquarium or wildlife centre (although international projects also seek volunteers, the cost can be prohibitive for some students). The practical experience of volunteering is a part of the value here: the other is that volunteering will always show the dedication and determination you need to be successful here.

If you are a school student, then GCSE subjects should include one or more of the sciences.

What career progression is available?

As in many fields, career progression is limited only by the effort and application of the individual. Progression will be determined by the starting role – be that keeper, education officer, conservation officer, vet nurse, or various administration staff. With focus and continual learning, you can move into more senior roles that help shape conservation projects, eventually becoming part of senior management that might include roles such as Head of Conservation.

Apart from titles and positions, the more involved and dedicated you are to protecting the world's biodiversity the more likely you are to become integral to broader conservation concerns and making contributions to the various Specialist Groups within the IUCN, Red List species accounts, BIAZA committees and more. These can often be more fulfilling in themselves (and keep you busier!) than what is theoretically a 'higher' position.

Conservation in zoos as a career; Further information and resources

It is useful to become familiar with the following organisations:

- WAZA.org Conservation Strategies
- IUCN Species Survival Commission
- IUCN Red List
- IUCN Green Status
- Convention of Biological Diversity
- Conservation Planning Specialist Group

Local Organisations to the UK

- Mammal Society
- Wildlife Trusts
- RSPB

Jo Brown, ZSL Whipsnade Zoo

Researcher

Dublin Zoo

Zoo-based research is essential for all aspects of zoo and aquarium management; from ensuring great standards of animal health, welfare and conservation to optimising the visitor experience and education. Zoo researchers generate, search for and encourage the use of scientific evidence for decision-making regarding enclosure design, management and policy. Whilst some research is carried out by staff employed by zoos, researchers and students from universities also deliver a range of projects, both short-term and longitudinally.

What does a zoo researcher do?

Many zoos employ staff to coordinate and manage research being carried out in their institution. These roles involve working with others in the zoo to prioritise research areas, advertising projects to external researchers or designing projects to deliver these results, managing ongoing internal research projects and perhaps helping to supervise projects being carried out by university or placement students. They also oversee approval of external projects (where students or researchers come into the zoo to collect data) and ensure all research is ethically approved. A key part of their role is also to share the results of research, both internally and externally (via conferences, publications and public talks). Zoo researchers can have a main focus on animal behaviour and welfare, but designing and implementing animal nutrition, health and wellbeing research across departments in the zoo can also be part of their role.

Zoo researchers may also work with zoo conservation programmes by undertaking or facilitating research with applications to both ex situ (e.g. conservation breeding and reintroduction programmes) and in situ conservation (e.g. development of methodologies and technologies for the study of wild populations).

Some work directly with wild populations, by coordinating or managing studies on their biology, ecology and health. Social scientists are another, and very important, type of zoo researcher, as they keep their focus on the assessment and improvement of visitor experience and education at zoos and aquariums. You can be a zoo researcher while specialising on a wide range of topics, including animal behaviour, health, physiology, genetics, ecology and social sciences.

Another role as a zoo researcher would be to work within a university as a researcher and specialise in zoo-based research. This role might solely focus on research, but often it would also involve teaching undergraduate/postgraduate students and supervising student research projects. A university-based researcher would work closely with zoos to identify priority research areas and design and carry out research projects to gather scientific evidence on the topic. This will ultimately improve our understanding, with the results of their projects being used by the study zoo and the wider zoological community. University based zoo researchers may design and deliver lectures to students, design and deliver assessments, share their research at national/international conferences and publish their work in scientific journals. A major part of a zoo researcher's role is to share their results with the public, perhaps via magazine articles or public talks.

For students, the annual BIAZA Research Conference occurs at a different BIAZA member zoos each year is a great way to share your research undertaken at zoos/aquariums, network with like-minded students and learn more about the zoo research world.

How do I get started in zoo research?

Normally you would enrol on a BSc programme in a relevant subject, usually within the biological or environmental sciences (e.g. animal behaviour, animal welfare, zoo biology, zoology, biology, animal conservation). More broad topics, such as psychology/social science, can also be a route into a research career in the zoo. The discipline you would enrol into would largely depend on the area you are most interested in working post-degree. During this time, it would be useful to gain as much practical experience as you can in zoo settings, for example via placements or volunteer work (if you are able). One important step that can allow you to show off your research talents is to conduct your thesis or dissertation project in your local zoo. Conducting an empirical study that is a priority for that zoo, or for the industry more generally, will add value to your own credentials as an applied science and add value to your CV.

making you stand out from the crowd as potentially employers will see your ability to focus on a question with impact and wider relevance.

You could then progress to study a relevant MSc degree, then potentially a PhD, if you feel that a career in research is for you. It is important to state that a zoo-focussed MSc or even a PhD on a zoo-based question is no guarantee of a permanent zoo research position once completed.

The most important thing you can do is to show your enthusiasm for this area and commitment to furthering our scientific understanding. This could be by volunteering at a zoo, wildlife trust or other establishment, by working with other captive animals (such as in rescue centres), by assisting with research (look out for citizen science research projects, where members of the public are asked to help) or by any voluntary work involving animals. Research-focused experience is very useful, as it will allow you to further develop scientific skills (e.g. research planning, data collection and management, data analysis and statistics). However, experience with other zoo departments (e.g. animal husbandry, education) is also extremely important as it will help you understand the various elements and complexities of the zoo environment.

You should also consider "soft" or transferable skills to help you develop in your employee desirability. Speaking a foreign language, for example, can help you stand out for field conservation projects. Computer programming and coding skills for statistical analysis show to a science department that you are capable of running statistical testing independently. Experience of presenting outputs of scientific research, at conferences or in peer-reviewed papers help show that you are keen to generate impact and disseminate research. And evidence of writing for professional audiences (e.g. keepers, animal managers and other stakeholders) show your ability to distil science down to its practical, applied components; taking the results of research straight to those that will use it and presenting it in an accessible format. In short, as well as telling a future employer about the title and subject of your research project, you should also tell them about the others things you did along the way, and the impact of that contribution to the industry.

What career progression is available?

In the long term, you could progress to becoming a more senior manager in a zoo, or perhaps a department/institute leader or professor in a university. You might find yourself specialising in a certain area of research and becoming a world leader in this area, or you might decide inspiring the next generation is your preference, by focusing on university teaching and project supervision.

Many avenues of doing zoo-based research are external to the zoo itself. For example, lecturing and professorship positions in universities where the academic or researcher has links to a local zoo or aquarium allows for a long-term research area to develop. This allows for strong professional, and industry links to be developed that benefit the zoo and provide the academic researcher with an increased portfolio. Many zoos rely on completion of their research aims using external research associations in this manner.

Keepers and those working with the animals directly can also develop their role to be more research facing. Getting a position as a zookeeper can allow for different avenues to be taken in the world of zoo animal husbandry and conservation. For example, registrar or curatorial positions may involve conducting and managing research (internally and externally) in some capacity. Ultimately, gaining the research experience and contacts, and securing a permanent position in a zoo will allow you to work out your own career path and options that are open to you for progression in research, if that is your eventual desired aim.

Communications

in zoos and aquariums

Zoo and aquarium communications is a fantastic career – where else do you get to tell the media about the breeding habits of snow leopards, make videos on octopus intelligence or create exciting campaigns for conserving native newts?

Zoo and aquarium communications is a broad and entrepreneurial field containing marketing, social media management, media relations and public affairs. Communications is often an essential part of the operations in a zoo or aquariums, driving visitors as well as conveying a wide range of projects including structural changes (such as new exhibits), brand development, and conservation/ education/ research projects.

Depending on the context, communicators might deal with a wide range of tricky subjects including negative stories, managing visitor criticism and leading a zoo/aquarium's response in the media. While communications are often delivered within a team, zoos and aquariums will also work with external PR agencies and this can be on a one-off or long-term basis.

What progression is available?

Long term communicators may aim to be senior managers within an organisation with a lot of responsibility for the image, brand and strategic direction of an organisation. Many organisations employ marketing managers and this may be the highest position that is purely based around communications at a zoo/aquarium. However, given the broad range of activities and issues you deal with working in zoo communications, there are lots of transferable skills which are often recognised at senior levels at larger zoos/aquariums.

Most senior levels can include director of communications, engagement director, public affairs director etc.

Dealing with the many and diverse communications needs also enables zoo/aquarium communicators to apply their skills beyond the immediate zoo/aquarium context and senior communicators may find themselves desirable candidates for roles across the visitor, environmental, conservation and animal welfare sectors.

How do I get started?

Communicators love a chat! One of the best ways of getting somewhere as a zoo or aquarium communicator is to ask to talk to someone who is already in this role. They can explain what steps you may take that is most relevant for their organisation or provide some opportunities for work place experience. They can also be very helpful in explaining the priorities areas with which to familiarise yourself with.

Communications can be a great career path for those who are working in presenting or stewarding within zoos/aquariums – the range and familiarity with zoo/aquarium issues and your excellent presentation skills can be a big plus for communications teams.

There are a range of communications qualifications that may help you make a start in your career. This can include qualifications in marketing or journalism. While this is helpful there are lots of positions which will value real life experience in communications even if this is in other sectors, such as corporate, business and even politics. Experience in these areas are a top tip for those seeking out a career in zoo/aquarium communications.

Demonstrating your interest in zoos and aquariums can be very helpful for getting started. Candidates may want to consider volunteering at animal organisations, campaigns they can be involved in or their own blog, website or social media channels.

Key skills for zoo/aquariums communicators include:

- Excellent presentation and writing skills
- A strong understanding of what makes for engaging content
- Social media management
- Video editing/photography skills
- An ability to work with a range of partners including media, sponsors and other departments

Josh Torlop - Trentham Monkey Forest

Glossary

ABWAK - The Association of British Wildlife Animal Keepers - a membership organisation for zoo professionals. See more at ABWAK.co.uk

Aquarist - A job title for those caring specifically for aquatic species, usually in aquariums.

Committee, BIAZA - Within BIAZA, there are six standing committees comprised of individuals who work at different BIAZA zoos/aquariums. These committees include the Species Advisory Committee (which deals with animal care and welfare advancements and knowledge-sharing), the Conservation Education Committee (supporting zoo/aquarium education across the community) and the Conservation Committee (supporting conservation whilst creating cooperative cross-zoo/aquarium projects).

Continuous Professional Development (CPD) - Learning throughout work to further one's career, whether through online learning, in-person events and workshops, or independent learning. A core part of the BIAZA's work is to provide CPD for its membership.

Curator - In zoos and aquariums, usually a senior member of the animal care team involved with the planning and acquisition of animals. Those working in this role may have alternate job titles such as Head Keeper.

DMZAA - Diploma in the Management of Zoo and Aquarium Animals. Run in partnership with BIAZA and Sparsholt College Hampshire. It is a two year programme designed for people already working in the zoo and aquarium community.

Ethology - the study of animal behaviour.

in situ - Conservation projects happening at the field location for the species/habitat of focus. E.g working in situ in the Pacific for coral reefs.

Registrar - In zoos, a record keeper involved in the management of animal and plant transfers and records. as well as planning, acquisition and onward transportation of animals. A Registrar facilitates these complex animal transfers between zoos/aquariums across international borders, making sure everything is kept to legal standards such as the zoo licencing legislation.

Studbook - The record of individual animals from one species, and their relations to each other across zoos and/or aquariums. Held by the Studbook Keeper. Vital for conservation breeding programmes for genetic diversity across zoos/aquariums.

Taxa - A taxonomic group of animals as per levels of Linnaeus' classification of species. Most commonly referred-to groups include birds, mammals, fish, reptiles etc.

Working Group, BIAZA - Part of the BIAZA committees, where more focussed expertise is required. For example, the Mammal Working Group, part of the Species Advisory Committee, is comprised of mammal experts across BIAZA zoos who work to further mammal welfare, and the expertise of all zoo mammal carers - such as by creating guides or holding workshop/conference events.

Blue Planet Aquarium