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## ICES advice 2012

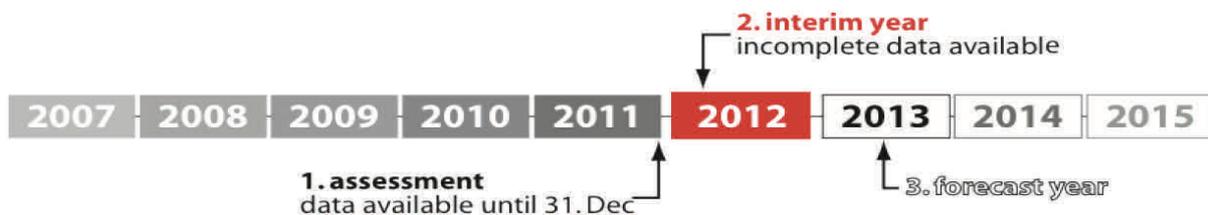
### Introduction of data limited advice

ICES has released [annual advice](#) on the status of fish stocks and options for sustainable fisheries in 2013. The advice release in May and June covers most stocks in the North East Atlantic including the North Sea and the Baltic.

This year ICES has, for the first time, expanded its scope of quantitative advice to include so called "data limited" fish stocks. This new approach intends to aid policy makers move towards sustainable exploitation of fisheries. The advice includes a principle of an increasing precautionary margin with decreasing knowledge about the stock status.

This is also the first year when ICES advice presents options for mixed fisheries in the North Sea. This advice is based on single-stock assessments combined with knowledge on the species composition of catches in North Sea fisheries. Furthermore, ICES has provided multispecies considerations for Baltic Sea fish stocks, which incorporate knowledge on the impacts fish stocks have on each other.

### Advice timeline



The production of ICES advice can be separated into three distinct temporal phases:

The first phase is the assessment, which uses data until 31 December of the last year. This phase looks at the past only and dealing with the stock status.

The second phase, between the assessment and the forecast, is the assessment (interim) year. As incomplete data are available for this year (the year is not over yet), ICES has to make a number of assumptions on the fishery and biology. These so-called interim year assumptions significantly influence the catch forecast for the next year, but these assumptions are the most uncertain. If in the following year t these assumptions prove markedly different from reality, stock status would be much different than that forecasted.

The third phase is the prognosis (forecast) on catch to be taken next year (the year for which advice is given).

[ICES advice](#) is published online and can be found on the [ICES website](#). In mid-July, some of the advice will also be published in a "popular version", a digest of the official advice.

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## Strengthening collaboration

### ICES signs memoranda of understanding with the General Fisheries Commission for the Mediterranean (GFCM) and the Intergovernmental Oceanographic Commission (IOC)

#### General Fisheries Commission for the Mediterranean

On 14 May, ICES entered into a formal agreement of collaboration with the [General Fisheries Commission for the Mediterranean](#) (GFCM). The document was signed by the Executive Secretary of the GFCM, Abdellah Srour, and Vice-President and Spanish delegate Carmela Porteiro who represented ICES on behalf of President Michael Sinclair at the signing ceremony in Marrakesh.

The GFCM is an organization that aims to promote the development, conservation, rational management, and best utilization of living marine resources, as well as the sustainable development of aquaculture, with competency in the Mediterranean, Black Sea, and connecting waters. The GFCM currently comprises 23 member countries (two of which are also ICES member countries) and the European Union.

Some of the areas where collaboration is foreseen include:

- Stock assessment and management plans of European Eel;
- Science developments related to the implementation of the [Marine Strategy Framework Directive](#);
- Training programmes and expert consultations on stock assessment and advice formulation;
- Indicators regarding the ecosystem impacts of fisheries – such as the indicators defined in annex 13 of the [Data Collection Framework of the EU](#);
- Development of frameworks for data collection and data collection planning;
- Development of data bases and data access.



Carmela Porteiro (ICES) and Abdellah Srour (GFCM) in Marrakesh. Photo courtesy of Eurofish.

#### Intergovernmental Oceanographic Commission

On 26 June, ICES and the [Intergovernmental Oceanographic Commission](#) (IOC) of the [United Nations Educational, Scientific, and Cultural Organization](#) (UNESCO) updated their collaboration agreement by signing a Memorandum of Understanding at the 45th session of the UNESCO-IOC Executive Council in Paris. The agreement was signed by IOC Chair, Sang-Kyung Byun, and French delegate Maurice Héral on behalf of ICES President Michael Sinclair.

The IOC is a specialized United Nations body with expertise in ocean science and services. Its purpose is to promote international cooperation and to coordinate programmes in research, services and capacity building in order to learn more about the nature and resources of the ocean and coastal areas and to apply that knowledge for the improvement of management, sustainable development, the protection of the marine environment, and the decision-making processes of its member states.

The agreement outlines broad areas for collaboration such as to intensify cooperation and avoid parallel work, share information and reports, to develop a common approach to issues such as training and capacity building, as well as facilitation of an ecosystem approach in the North Atlantic. The agreement also identifies specific science issues for further collaboration such as [Global Ocean Observing System](#) (GOOS), climate change, harmful algal blooms, and transfer of invasive marine species among others.



Maurice Héral (ICES) with Sang-Kyung Byun (IOC) in Paris. Photo courtesy of UNESCO.

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## Climate Change and our oceans

### ICES, PICES, and the IOC host second international symposium

When the [Intergovernmental Panel on Climate Change \(IPCC\)](#) released their [Fourth Assessment Report \(AR 4\)](#) in 2007, a chapter appeared to be missing: the impact of climate change on the world's marine ecosystems. Consequently, the international marine science community initiated their own endeavor to communicate the effects of climate change on the marine ecosystem, leading to the ICES/PICES/IOC International Symposium on Effects of Climate Change on the World's Oceans, held in Gijón, Spain, in 2008. Since then, research has accelerated and this is reflected in the growing number of published works. A follow-up to the meeting in Spain was needed to bring together experts to exchange new observations, results, models, and ideas at a global scale, as well as to discuss the opportunities to mitigate impacts and protect the marine environment and its living resources.

ICES, PICES, and the IOC in association with the [Korean Ocean Research and Development Institute](#) in South Korea have just hosted this follow-up symposium, the [Second International Symposium on Effects of Climate Change on the World's Oceans](#), which took place in Yeosu, South Korea, from 15 to 19 May 2012.

With [Expo 2012](#) and its theme "The Living Ocean and Coast: Diversity of Resources and Sustainable Activities" serving as a particularly relevant backdrop to the conference, the conveners were delighted with the high scientific standard presented to participants, especially a number of excellent presentations both on specific process studies, time series analyses, and integrative model studies.

While impossible to mention all the important results from the symposium, conference organizers have highlighted a few cross-cutting topics that emerged:

### Diverse ecosystems mean diverse responses to climate change

Regional ecosystem responses to global climate change are much more diverse than previously considered because of the variance of critical factors and processes (or structure and function) among ecosystems. Moreover, the physical forcing varies among regional ecosystems and therefore marine ecosystems respond to regional climate change and not global climate change.



ICES, PICES, and IOC representatives along with members of the local organizing committee and Yeosu officials at the opening of the [Second International Symposium on Effects of Climate Change on the World's Oceans](#) held in Yeosu, Korea in May.

## Past ecosystem responses are a combination of natural climate variability and climate change

Not all observed changes are due to ocean climate change. Ecosystems have responded to various frequencies of natural climate variability from interannual to multidecadal and care should be taken so as not to interpret all kinds of past climate change as anthropogenic.

## More insight into local and regional processes

Local process understanding is needed both in the construction of global models and in the interpretation of their results as many of the critical ecosystem processes only can be captured by sufficient downscaling.

## Impact studies should define physical processes studied

The physical sciences basis, as appears in the [IPCC WG 1 AR 4](#), does not sufficiently provide the required information on ocean processes as input to impact studies on marine ecosystems. One example is natural climate variability which relates to upwelling regions, as well as to the inflow of warm Atlantic water to the Arctic. This has clear and specific impacts on regional marine ecosystems but is poorly captured by global climate models.

## Model validation

The increasing role that modeling plays in science makes it all the more important to continuously validate the relevance of the processes in our models as well as validating them against observations.

The proceedings of the symposium will be published in the [ICES Journal of Marine Science](#) in 2013.



Left: Svein Sundby (ICES, symposium convener) answers questions from the audience. Middle: Yeosu. Right: Alex Bychkov (PICES, Symposium coordinator), Lev Bocharov (PICES Chairman), Michael Sinclair (ICES President), Adi Kellerman (Head of ICES Science Programme), and Sang-Kyun Byun (IOC Chairman).

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## Getting integrated

### ICES welcomes new Ecosystem Professional Officer



**Ecosystem Professional Officer Mark Dickey-Collas.**

ICES Secretariat welcomes a familiar face to a brand new post. A new time-limited professional position has been created to facilitate the development of integrated ecosystem advice.

The Ecosystem Approach (EA) is an important concept for the management of marine resources. There are many definitions for the term, but in the ICES context it is defined as “**Management that takes into account the effects of fisheries on the ecosystem and the effects of the ecosystem on the fish stocks.**” The principals of the EA to fisheries management are contained in many international and national legal instruments such as the **Plan of Implementation of the World Summit on Sustainable Development**. As states work towards implementation of these principles, ICES is working to respond with the science needed to support these policy decisions.

The recipients of ICES advice have requested that ICES move actively towards stronger integration of ecosystem considerations in its advice, both on fisheries and on environmental matters. To respond to this demand, ICES Science Committee (SCICOM) and Advisory Committee (ACOM) are working jointly towards integrated assessments of ecoregions in the ICES area and aim to use these assessments to produce ecosystem overviews as integral parts of the **annual advisory report**. To support this process, Mark Dickey-Collas has joined the Secretariat in Copenhagen to help provide support to the Science Steering Group on Regional Sea Programmes (SSGRSP) and related expert groups to develop and implement a framework for integrated assessments. Mark has also been tasked to act as a contact for oceanography in ICES, an area which has fallen below the radar in recent years. Ocean observing and understanding oceanographic variability are core components of the ecosystem approach.

Mark’s role will be to act as contact and facilitator for all the ongoing initiatives on integrated ecosystem advice within ICES. He is also expected to sit between the advisory and science sides of ICES, a balance that he has managed for the last 15 years. The disadvantage is that Mark must attend two sets of weekly departmental meetings in the Secretariat. His close working relationship with the Regional Seas Programme has already begun and he is looking forward to the Benchmark for Integrated Ecosystem Assessment (WKBEMIA) in November of this year and the special session on Integrated Assessments being held on the Wednesday afternoon at the **ICES ASC**. The role will also be outward looking, and Mark is will liaise with the Regional Conventions about their needs for integrated ecosystem assessment.

Mark Dickey-Collas has been an **active member of the ICES community** serving as member and Chair in many expert groups and committees. The Secretariat welcomes Mark and looks forward to helping make his term a successful one.

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## Introducing iMarine

### Science driven policy information management



The interaction and collaboration of policy-makers, scientists, environmental institutions, and stakeholders is a necessary step in the implementation of an ecosystem-based approach to sustainable marine management. Launched in November 2011, iMarine is a new collaborative effort that aims to assist with this process. Permitting cross-disciplinary data collection, harmonization, and analysis, iMarine will help policy-makers address global challenges affecting the marine ecosystem, the fishery sector, and local economies and communities.

According to Donatella Castelli, iMarine Project Director, “The iMarine data infrastructure aims to foster “innovation” by providing an open platform and a variety of services that are designed to become an integral part of the organized procedures of a wide community of practitioners addressing the challenges of fishery management and the conservation of our marine resources”.

### Specialized services for scientific research

By providing a highly efficient e-Infrastructure, iMarine services provide life cycle management and an open processing environment for scientific data and documents, which accelerate data discovery, exchange, harmonization, and analysis, for a variety of stakeholder communities.

### Dedicated tools for science-based policy-making

Science-based policy decisions derive benefits from the e-infrastructures that provide access to quality data services and indicators. The use of collaborative tools designed to support data quality assessment, such as [Aquamaps](#), integrated capture information system (ICIS), and vessel transmitted information tool (VTI), bring together multidisciplinary data sources, offer scientific analytical tools, and facilitate communication.

### Policy development for a sustainable iMarine future

Two groups of experts, the iMarine Board and the Advisory Council, are tasked with establishing data-centric governance models to ensure the sustainability of the iMarine e-Infrastructure. Their knowledge and experience will help to define organizational and policy recommendations with the Ecosystem Approach for Community of Practice (EA-CoP) for a sustainable future of the e-Infrastructure.

Neil Holdsworth, Head of ICES Data Centre and iMarine Board member, sees the new initiative as encouraging “a more efficient and collaborative use of both knowledge-based and technology-based resources to the benefit of the community of scientists, managers, and policy advisors working in the marine ecosystem management domain”.

Other iMarine Board members hope that, by bringing together scientists from various fields, new synergies can be created by contributing data, tools, and expertise through a shared infrastructure. iMarine will identify, capture, store, and share different data sources and formats that are produced and processed by fishery-management and marine ecosystem conservation stakeholders.

To find out more, follow iMarine’s progress, and become a member of the online iMarine Community of Practice, please follow [this link](#).

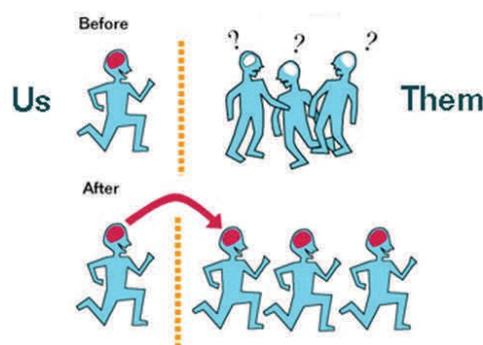
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## That's not what I said!

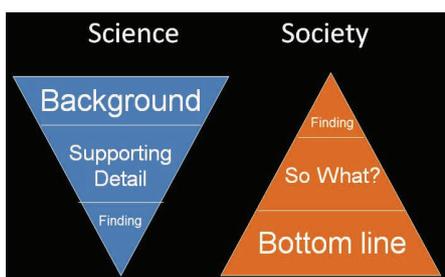
### ICES training course helps scientists get their point across

Try this exercise: sing your favourite song in your mind. Now, go find a colleague and tap the song out with your hand. Whilst every high note, drum beat, and guitar solo is played to perfection in your head, most probably what your colleague hears is a random series of taps on the table and you are left bewildered as to how they can't hear Whitesnake's classic hit *Is This Love*.

Assuming that your audience all have the same background knowledge is a problem in terms of communication according to Kristian Teleki ([SeaWeb](#)) and Martin Pastoors ([Centre for Marine Policy](#)), who recently taught the first ICES training course on communication, *Communicating Science and Advice*, held in Copenhagen 18–19 June. Policy makers, fishery managers, fishers, possible funding sources, or the general public: each audience brings a distinct knowledge and therefore demands a separate approach. "There are a lot of scientists out there who think they are good communicators but actually they are communicating in a way that makes their work completely impenetrable and inaccessible to a whole range of different audiences" says Teleki, "and so the idea of this course was to get participants thinking about the way in which they communicate".



Understand your audience and give them a clear message.



Scientific communications often focus on procedural details while society often looks for the bottom line: why is this important?

Changing the style in which scientists communicate is something of a personal mission for Pastoors (who often arranges 'out of the box' communication and presentation events at [ICES Annual Science Conference](#)). He feels that the traditional mode of presenting science, which typically involves a lot of emphasis on background and methodological information, but very little on conclusions, needs to be turned upside down. Outcomes need to be highlighted. "What significance do the results have for society?" and "how can the information be used?" are central questions that should be addressed in the communication process. Fisheries science and fisheries advice has been

pervaded by notions of independent science on the one hand, but responding to policy needs on the other. According to the trainers, the communication of science and advice should therefore aim towards becoming an exploratory, inclusive, and dialogue based process rather than a one way stream of information.

To help participants reflect on the communication process, the trainers took the role of science in society as a starting point. "Who is the information for?" was a question participants were asked to consider during the two day course. There is a spectrum of views on the role a scientist should play in society, from the traditional view of scientists as unbiased seekers of truth to the "honest broker", who is engaged in decision making by helping to clarify the scope of choice for decision makers.

Having addressed the issue of understanding who your audience is, the trainers' next important point was making sure the message gets across. Two questions should always be asked: what do I want to say and why is it important to the audience? Pastoors and Teleki recommend that any type of communication be condensed into no more than three key messages. These main messages should be clear, concise, and address the actions you would like your audience to take. Failure to do so can result in information overload.

Both course instructors agree that in order to change the current mindset, communication skills need to be built into the educational curriculum. Teleki feels that Europe lags behind in this aspect, noting “Focusing on learning these skills from the outset, students can incorporate communication into all aspects of what they do, learn their style of communication, and become more effective communicators”. Pastoors says “I have seen this happening with the first year students at the university where I teach on marine policy. They start to adopt the traditional communication style, so instead I teach them about the importance of beginning with a clear message. It is the most effective way to achieve change, to start with students that are on the first part of the journey”.

Participants on the course felt that it was the perfect mix of theory and practical exercises. Hannah Carr ([Joint Nature Conservation Committee, UK](#)) attended the course to improve her presentation skills as well as to learn how better to deal with media. “I thought the course was very good, especially the practical elements. Conducting mock interviews with a journalist, although quite difficult at the time, really helped”. Agreeing with her was Marc Lanteigne ([Department of Fisheries and Oceans, Canada](#)) who says “The hands on exercises really impressed me and also that we used actual ICES documents as part of our training, so we looked at the good and the bad aspects of actual documents as communication tools”.

For some homework of your own, the trainers have recommended the following literature:

Roger Pielke *The Honest Broker*

Randy Olsen *Don't be such a scientist*

Nancy Baron *Escape from the Ivory Tower*

Garr Reynolds *Presentation Zen*

Cliff Atkinson *Beyond Bullet Points*

More information about ICES Training Programme can be found [here](#).



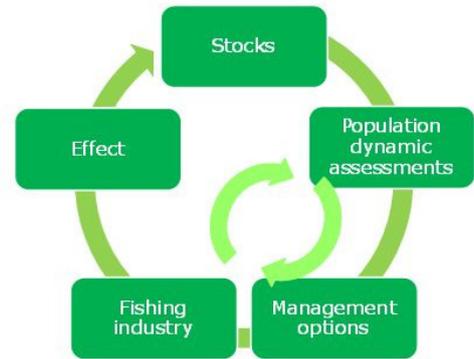
Participants who took part in ICES training course, Communicating Science and Advice, along with course instructors, Kristian Teleki and Martin Pastoors.

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## Mind the GAP

### A participatory approach to long term management bridges the divide

In 2010, an ICES workshop on procedures to establish the appropriate level of the mixed herring TAC (WKWATSUP), was organized bringing together representatives from Norway, the European Commission, scientists, fishery managers, Regional Advisory Councils (RACs) and fishing organisations to help solve the problem of administering mixed herring TACs (Total Allowable Catch) in the Skagerrak and Kattegat sea areas. The management of this stock has always been carried out in an ad hoc fashion because of the different issues at play: the area overlaps both the Baltic and North seas, as well as European Union (EU) and Norwegian borders, and there are multiple fleets fishing the stock. Giving a stable management advice in this environment is not easy, and therefore, the EU and Norway requested that ICES set up a meeting to provide alternative advisory options. The outcome of the meeting was a realization that there had been a lack of communication and fundamental differences in the perception of the problem.



The GAP 2 project seeks to include all stakeholders for a more participatory approach to long term management.

This apparent disconnect between scientists, stakeholders, and policymakers struck a chord with workshop chair Lotte Worsøe Clausen (DTU Aqua). Worsøe Clausen had been involved with GAP 1, an EU project that sought to lay the groundwork to bring together fishermen and researchers from across the continent to help inform and shape policy. She says, "Following the WKWATSUP meeting, I approached Steven Mackinson, the project coordinator, and proposed that this case would be the optimal study for us in our area". GAP2, the second phase of the GAP project, proposes to establish a framework which incorporates the active participation of fishers and their knowledge into a research programme, by creating participatory dialogue with both scientists and policy makers. Worsøe Clausen got the green light to go ahead.

Initial challenges included language barriers and timing, but were overcome to ensure that everybody would be represented. As a starting point, participants were asked how they would better manage the fishery from their point of view. According to Worsøe Clausen, this was an extremely productive exercise. "To begin with, many opposing views appeared to be put forward, but through a process of facilitative listening and categorizing our points of view, we began to merge from seemingly opposite ends of the spectrum to realize that we actually have the same perception of what is important in a long term management plan. Once the overarching ideas were categorized, more questions emerged: what were the practical implementations that had to be figured out? What could be a political issue? What were the biological issues? On the points where we did not agree completely, we managed to create an action plan and we will move forward from there".

The establishment of a productive working relationship between fishers, RACs, fishery managers, scientists, and policy-makers has been the biggest outcome of the process so far for Worsøe Clausen. "We have the luxury of having a case study devoted to a common issue and therefore we have had the time to build the trust between the European Commission, the Baltic Sea RAC (BSRAC) and Pelagic RAC (PelRAC), the fishermen, the fishing associations and the scientists. We all want to discuss and solve this. We are not meeting to state our minds and then go back home again. I think that's the plus and the success story – that through a process based on transparency and trust, we have actually bridged the gaps between us and can now, with a common effort, look at how to solve this complicated management".

Providing variable *ad hoc* advice annually for this fishery means that there are difficulties both for the fishers in planning their annual activities and also for scientists. Worsøe Clausen says “Scientists have to forecast how the fishery will be, but if we can’t be sure how the management will be carried out, we can’t forecast the fishery. In terms of biology, there will always be uncertainties but reducing the human imposed uncertainty from the process, through having a higher degree of transparency and a common process that everyone agrees to, will ensure a more efficient management of the fishery”.



[Learn more about the GAP2 project.](#)

The process has, so far, been a success for all involved according to Worsøe Clausen, who hopes that the results of the case study will change the advisory process from one that is based upon formal biological science alone, to one that includes a more participatory process. GAP 2 includes similar case studies which are taking place across Europe, all of which aim to

combine fishers, scientists, and policy-makers knowledge and skills to enhance the understanding and management of fisheries and the marine environment.

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## Grammar Slammer

### Bill Anthony says, Feeling tense?

Ackley had obviously run all the way. His face was flushed and he could barely catch his breath. In his sweaty palm, he clutched the now-sweaty fruits of his labour: a scholarly attempt at revealing what was on his mind, if any. His eyes whispered, love me, love me. But his paper mumbled, reject me, reject me. Peeling the moist pages apart, I realized that this wasn't going to be easy.

Ackley didn't take it well. "I want a second opinion," he sobbed. "Okay," I said. "You're ugly too".

In retrospect, I realize that's not what Ackley meant.

Fred (whose greatest fear is that the person who thought up all these grammar rules may be thinking up something else) summed it up best when he said the paper reminded him of the time that the Dumpster exploded. It was a wildly extravagant explosion of tenses. Ackley hadn't understood how to place his work in the context of time.

Properly used, verb tenses indicate the temporal relation of past events to each other and to the present, and indicate the completion or continuation of events.

In scientific writing, completed observations and procedures are described in the **past tense**, as are specific citations and results, for example, *Salinger (1951) showed...*, *We found...*

Directions, conclusions, generalizations, and references to stable conditions are stated in the **present tense**, as are currently held theories: *Theory of mind refers to...*

The **past perfect** tense is used to describe events completed before a time in the past; for example, *A great deal of research **had** been conducted on the correct pronunciation of "aunt" vs. "aunt"*.

Events repeated or continued from the past to the present are described with the **present perfect tense**; for example, *Manatees, which can weigh more than a thousand pounds and resemble the result of a genetic experiment involving a walrus and a blimp, **have** been studied in numerous climatic conditions.*

Here is a helpful guide to using verb tenses in the sections of a research paper. And remember, there are always exceptions.

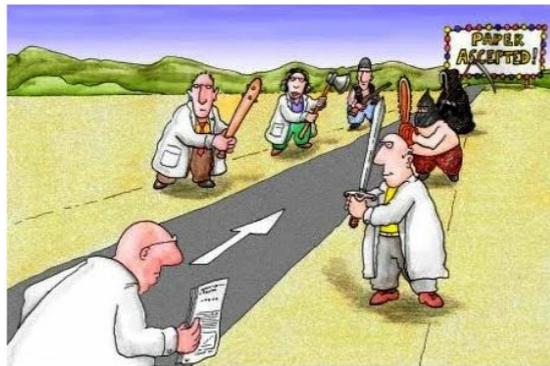
### Abstract

This usually refers to your unpublished results and uses the **past tense**. If it includes background information that is generally accepted as fact, use **present tense**.

### Introduction

An introduction includes background information that is generally accepted as fact and explains why your research is important. It is usually presented in the **present tense**. *According to the International Association of English Professors of English, the correct pronunciation of "aunt" is "nuclear"*.

By using the **present tense**, you indicate to the reader that you believe that the research findings are



The gauntlet of peer review was nothing compared to what awaited Ackley in the editor's office. Picture courtesy of [genomicenterprise.com](http://genomicenterprise.com).

still true and relevant, even though the original research may have been conducted in the past.

### Methods

Use **past tense** to describe what was done. Use **present tense** for diagrams and figures: *Table 1 shows all the King's horses trying to put Humpty together again.*

### Results

Use **past tense** to describe the results you obtained.

### Discussion

This often alternates between **past tense** (when discussing results of current study: *we found*) and **present tense** (*our results are consistent with... or the theory of natural selection predicts that...*).

Use **present tense** to explain significance of your results. "*Synergy*", when used by business professionals, indicates that they have no clue as to what business they are actually in.

### Conclusion

Use a combination of tenses to highlight past research, summarize the main findings and the major implications, point out any limitations, and offer suggestions for future research.

While I was writing this, Ackley\* showed up with his latest paper, "Flame-Proofing Your Cat". It is neatly divided into three parts: (i) The Hypothesis, (ii) The Part That Goes After The Hypothesis, and (iii) The Conclusion (Which is the Same as the Hypothesis). I admire his persistence. There are so many other things I would like to have shared with him and you, gentle readers: active and passive voice for example. But we've run out of time.

\* Robert Ackley is a character in J. D. Salinger's *Catcher in the Rye*, and was immortalized in one of Salinger's most famous lines, "You're a real prince, Ackley".

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